

Re: How can I subtract one frequency from another ???

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- *From:* [NoSpam@xxxxxxxxxxxxx](mailto:NoSpam@xxxxxxxxxxxxx) (Bob Masta)
  - *Date:* Mon, 09 Jan 2006 13:51:29 GMT
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On Sun, 08 Jan 2006 23:28:46 GMT, "Frank" <technician@xxxxxxx> wrote:

>  
>A bit more info on the application, the input will be either sound such as  
>music, (well within the human hearing range) or pure tones (sine waves).  
>I will be squaring up the output with an LM339 comparitor to drive a logic  
>level input IGBT.  
>If the 565 needs a square in, I could figure something out, but would rather  
>have the input to the comparitor reasonably "preserved".

Please explain what your ultimate goal is here... I sense impending doom! In general, if you multiply (a better term than "mix" at audio frequencies, where "mix" almost always means "linear sum") one sine wave by another you will get only sum and difference frequencies in the output. If you are interested in only the difference frequency, you would need to filter out the sum frequency. This is a non-trivial problem for the frequency ranges you mention.

But on top of that, you mention that one input will be a sound such as music. But music is (typically!) composed of many different frequencies sounding at the same time (multiple instruments, chords, harmonics, etc). So there is no hope of getting a single difference frequency (difference with what?).

Perhaps with more details we can suggest a workable solution, or at least save you a disheartening failure!

Best regards,

Bob Masta  
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Home of DaqGen, the FREEWARE signal generator

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- **References:**

- ◆ **[How can I subtract one frequency from another ???](#)**
  - ◇ From: Frank
- ◆ **[Re: How can I subtract one frequency from another ???](#)**
  - ◇ From: Andrew Holme
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