

Re: DCO/VCO Fine clock output?

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dancedynamix@xxxxxxxxxxxx wrote:

Hey there,

I'm trying to figure out how to output a clock frequency depending on the position of a potentiometer slider.

I need the clock frequency to range from 39KHz to 49KHz and the mid-point to be 44.1KHz. I've been informed a DCO would be the best option but I'm not sure if their output range can be that finely tuned? All the DCO's I have found go up to around 20MHz and do not seem suited to a lower frequency task like this.

Does anyone have any advice as to how to finely tune an output frequency of one of these devices?

My original thoughts were to use an ADC to sample in the position of the slider and then use a DCO. Are VCO's not stable enough? I need the clock to be accurate and precise...

Any help greatly appreciated! Many thanks, Alex.

I'm guessing you want this for a digital audio clock. I would suggest a DDS chip such as AD9850 or one of the slower versions. They go down to 1Hz or less, and can be programmed with a PIC microcontroller such as a PIC16F84A, and you would also have to hook up a serial output ADC to digitise the pot position. I think that this solution would produce a less noisy (lower phase noise) clock than any analogue method that I can think of, and it would be very repeatable and manufacturable. If lower performance is OK, or lower power consumption and lower cost interests you then some kind of VCO like the one out of a 4046 IC might do what you want.

Chris

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