

Re: Trying to understand how to design circuits

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- *From:* John Larkin <jlarkin@xx>
 - *Date:* Wed, 28 Dec 2005 09:26:18 -0800
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On Wed, 28 Dec 2005 08:58:15 GMT, "Kevin Aylward"
<see_website@xxxxxxxxxxxx> wrote:

>John Larkin wrote:

>> On 26 Dec 2005 17:37:31 -0800, "chriswilliams"

>> <chriswilliams65@xxxxxxxx> wrote:

>>

>>> Hi all:

>>>

>>> I am trying to understand the process by which the design of circuits
>>> is carried out.

>>> How from the white paper begins the design of a certain circuit?

>>>

>>> In many other areas one understands that there is a certain
>>> structure, a certain order, a process. For example:

>>>

>>> In the case of a writing one understands that there is a thesis, main
>>> ideas, ideas of support, a conclusion. All this must be articulated
>>> to achieve a certain objective. This is understandable.

>>>

>>> In the case of a car is understood that exists the motor, the
>>> electric system, the chassis, the panel, all they complying a
>>> certain function and thus in many other areas as the software, Civil
>>> Engineering, etc.

>>>

>>> But in the case of the circuits all seems very confused (at least for
>>> the novice). One doesn't know how someone decided to put a resistor
>>> here, there a diode, or a capacitor over there. At times seems that
>>> certain circuits were discovered by accident. Which is the center and
>>> which the periphery.

>>>

>>> So the question is:

>>> Once one has certain know-how of electronics as the function of the
>>> components, the basic theory, etc

>>> ¿How to proceed from the white paper to go building a certain
>>> circuit?

>>>

>>> How to decide where to put a resistor, a diode, a capacitor, etc?

>>>

Re: Trying to understand how to design circuits

>>> Thanks in advance by any comment.

>>

>>

>> Barrie Gilbert did a chapter in Jim Williams' first (1991) Analog
>> Circuit Design book[1], where he talks about this very issue, "Where
>> do little circuits come from?" Highly recommended, his bit and the
>> whole book.

>>

>

>*ALL* "new" design is a random variation from an existing design.

All of yours, maybe.

>

>If the design were *all* new, it would have say, no diff pairs, no
>cascode, no source followers no etc, that is, it could only be an
>aimless connection of component terminals, and could not possible
>achieve anything.

Am I allowed to use resistors? Wires? Or would that make it
derivative?

>

>If the new design had no random component, it would, by definition, be
>derivable from existing designs, in which case it couldn't be genuinely
>new. Random generation is the only way to produce a non derivable
>result. If it is random then we have no control over it, by definition.
>Its random. The brain is a Darwinian machine, and that is how it
>produces "new" designs. Copying, Selection and Random variation is all
>there is.

>

>John, you seem to think that there is merit in coming up with something
>new. Why?

Because it's fun? Because it's profitable? Because it's beautiful?

Because it amuses me.

>The brain can only do this by a random process, so what's
>superior about generating something by accident? For example, it way
>harder to copy a complicated arpeggio and play it fast, then to generate
>new music. Its piss easy to hit some random notes on a piano.

Damn, what a bleak opinion you have of yourself.

John

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Re: Trying to understand how to design circuits

- **References:**

- ◆ **Trying to understand how to design circuits**
 - ◇ From: chriswilliams
- ◆ **Re: Trying to understand how to design circuits**
 - ◇ From: John Larkin
- ◆ **Re: Trying to understand how to design circuits**
 - ◇ From: Kevin Aylward

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