

# Re: Special AND-gate

---

*Source:* <http://sci.tech-archive.net/Archive/sci.electronics.design/2008-04/msg01355.html>

---

- *From:* YD <ydtechHAT@xxxxxxxxxx>
  - *Date:* Tue, 08 Apr 2008 16:41:25 -0300
- 

Late at night, by candle light, Bernd Schneider  
<berndschneider90@xxxxxxxxxx> penned this immortal opus:

Hi,

I am looking for a way to design a boolean AND-gate (with possibly many inputs) that consists of several standard AND, XOR, NOT, randomness gates and has the following properties:

1. On input a,b it output a AND b
2. The encoding to present a AND b has the same probability as NOT(a AND b)

Note that the second property is for instance not satisfied for the standard binary encoding because the output 1 has only probability 1/4 where 0 has 3/4. What I would like to have is that both outputs have the same probability.

The only way I can think of to solve this problem is to use some kind of dynamic encoding, i.e. sometimes the 1 is used to represent a 0 and sometimes a 0 is used to represent the 1.

Regards,  
Bernd

Noise generator, zero crossing detector, buffer as fit.

– YD.

—

Remove HAT if replying by mail.

.