

[Your Name]
[Your Address]
[City, State, Zip Code]
[Email Address]
[Date]
[Recipient Name]
[Recipient Title]
[Company/Organization Name]
[Address]
[City, State, Zip Code]

Dear [Recipient Name],

I hope this letter finds you well. I am writing to provide an explanation of the XNOR gate, a fundamental digital logic gate used in various electronic circuits.

The XNOR (Exclusive NOR) gate is a digital circuit that outputs true or '1' only when the number of true inputs is even. It can be seen as the complement of the XOR (Exclusive OR) gate. The truth table for the XNOR gate is as follows:

Input A	Input B	Output (A XNOR B)
0	0	1
0	1	0
1	0	0
1	1	1

Based on the table, we see that the XNOR gate only outputs a high signal when both inputs are the same--either both are low (0) or both are high (1). This property is particularly useful in equality detection applications.

In terms of implementation, the XNOR gate can be constructed using basic logic gates such as AND, OR, and NOT gates. The equation representing the functionality of an XNOR gate can be expressed as:

$$Y = (A \text{ AND } B) \text{ OR } (\text{NOT } A \text{ AND } \text{NOT } B)$$

I hope this brief explanation provides clarity on the concept of the XNOR gate. Should you have any further inquiries, please feel free to reach out.

Thank you for your attention.

Sincerely,

[Your Name]
[Your Title/Position] (if applicable)
[Your Company/Organization] (if applicable)