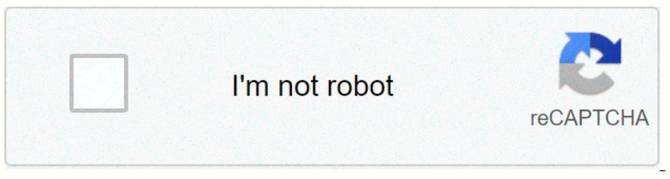

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8 input nor gate ic

This article is about NOR in the sense of an electronic logic door (e.g. CMOS 4001). For NOR in the purely logical sense, see Logical NOR. For other uses, see Also (disambiguation). 4001 redirects here. For the year, see the 5th millennium. This article needs additional appointments for verification. Please help improve this article by adding quotes to reliable sources. Material without source can be challenged and removed. Find sources: PUERTA NOR – News ? Newspapers? Books? Academic? JSTOR (September 2016) (Learn how and when to delete this template message) INPUT OUTPUT TO B TO NOR B 0 0 0 0 0 0 0 0 1 1 0 The NOR gate is a digital logic door that implements logical NOR - it behaves according to the truth table on the right. A HIGH (1) output results if both entrances to the door are LOW (0); if one or both inputs are HIGH (1), a LOW (0) output occurs. NOR is the result of denial of the OR operator. It can also be seen in some ways as the inverse of an AND door. NOR is a functionally complete operation: NOR doors can be combined to generate any other logical function. Share this property with NAND Gate. Conversely, the OR operator is monotonic, as it can only change LOW to HIGH, but not vice versa. In most, but not all, circuit implementations, denial comes for free, including CMOS and TTL. In such logical families, OR is the most complicated operation; you can use a NOR followed by a NO. A significant exception is some forms of the domino logic family. The original Apollo Guidance computer used 4,100 integrated circuits (ICs), each with only two 3-input NOR doors. [1] Symbols There are three symbols for NOR doors: the American symbol (ANSI or 'military') and the IEC symbol ('European' or 'rectangular'), as well as the deprecated DIN symbol. For more information, see Logical Door Symbols. The ANSI symbol for the NOR door is a standard OR door with a connected inversion bubble. The bubble indicates that the door function has either been reversed. MIL/ANSI Symbol IEC SYMBOL DIN SYMBOL NOR Full hardware description and NOR Gates pinout are basic logic gates, and as such are recognized in TTL and CMOS ICs. The standard, 4000 series, CMOS IC is the 4001, which includes four independent, two-input, NOR doors. The pinout diagram is as follows: Pinout Diagram of a 4001 Quad NOR DIP-format IC 1 Input A1 2 Input B1 3 Output Q1 4 Output Q2 5 Input B2 6 Input A2 7 Vss8 Input A3 9 Input B3 10 Output Q3 11 Output Q4 12 Input B4 13 Input A4 14 Vdd Availability These devices are available from most semiconductor manufacturers such as Fairchild Semiconductor, Philips or Texas These are generally available in dip and through-hole SOIC format. Datasheets are available in most datasheet databases. In the popular CMOS and TTL logic families, NOR doors with up to 8 inputs CMOS 4001: 2-input 4025 NOR door: 3-input 4002 NOR triple door: 4-entrance 4078 NOR double door: 8-entry nor door single 7402: Quad 2-entry NOR door 7427: Triple door 3-entry NOR door 7425: Dual 4-entry nor obsolete) 74260: Dual 5-Input NOR Gate 744078: Single 8-input NOR Gate In older RTL and ECL families, NOR doors were efficient and more used. PMOS NOR door implementations with load resistance. The diagrams above show the construction of a 2-input NOR door using NMOS logic circuits. If any of the inputs are high, the corresponding N-channel MOSFET lights up and the output is lowered; otherwise, the output is extracted high through the pull-up resistor. The physical design of a NOR CMOS The following diagram shows a 2-input NOR door using CMOS technology. The diodes and resistors in the inputs are to protect the CMOS components from damage due to electrostatic discharge (ESD) and play no role in the logical function of the circuit. Un buffered CMOS two input NOR door Functional integrity Main article: Nor logic The NOR gate has the functional integrity property, which it shares with the NAND gate. That is, any other logical function (AND, OR, etc.) can be implemented using only NOR doors. [2] A complete processor can be created using NOR doors only. As NAND doors are also functionally complete, if no specific NOR doors are available, one of the NAND doors can be made using NAND logic. [2] Desired door NAND Construction See also Y door OR door NO door NAND door XOR door XNOR door NAND logical Boolean algebra (logical) Flash memory references - Whipple, Walt (2019). First Hand: Apollo Orientation Computer Hacking. Engineering and Technology History Wiki. A b Mano, M. Morris and Charles R. Kime. Fundamentals of Logic and Computer Design, Third Edition. Prentice Hall, 2004. 73. Wikimedia Commons has media related to NOR gates. Obtained from The CD4078 NOR/OR Gate provides the system designer with direct implementation of the NOR and OR functions of 8 positive logic inputs and complements the existing family of CMOS doors. Packaging: DIP-14Voltage: 20V Report a problem Suggest a product