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NASA TECH BRIEF



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Novel Circuit Combines Pulse Stretcher With NOR Gate





The problem: To provide a NOR gate with an output pulse of some predetermined minimum duration. Conventional circuitry has employed an additional NOR gate used with a triggered monostable multivibrator.

The solution: A pulse-stretching circuit combined with a conventional NOR gate.

How it's done: Figure 1 shows a pulse-stretcher circuit added to a conventional NOR gate circuit. With all the inputs at ground potential, the output is positive, current flows through C_1 and R_1 into the base of Q_2 turning it on. Current flows into the base of Q_2 until C_1 is charged (approximately 3 times the R_1C_1 time constant). If the inputs become positive (continued overleal)

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Notes:

1. The circuit works equally well with PNP transistors, all polarities being reversed.

- 2. This circuitry has been used successfully in a square-root computer and with digital oscillators.
- 3. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer Goddard Space Flight Center Greenbelt, Maryland, 20771 Reference: B64-10150

Patent status: NASA encourages commercial use of this innovation. No patent action is contemplated. Source: Rodger A. Cliff (GSFC-187)