Discrete Logic Replacement

Using the PIC12C509 as a RANDOM GENERATOR
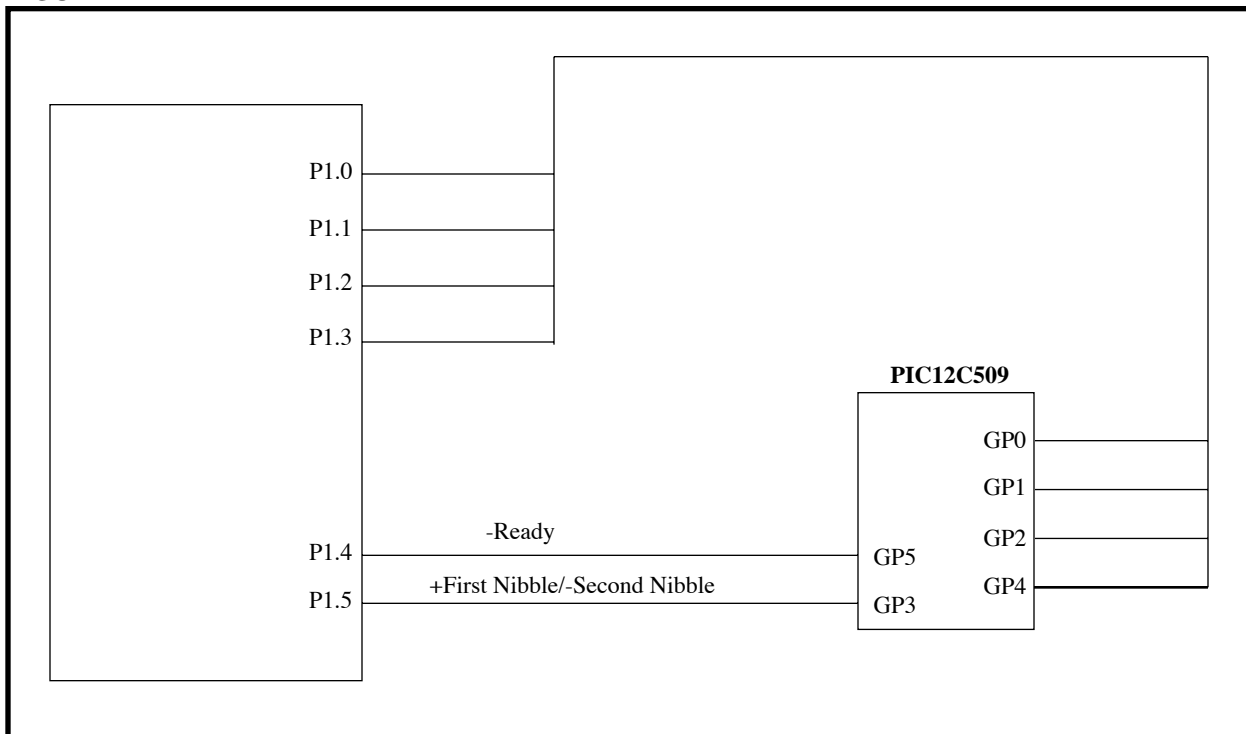
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DESCRIPTION

There are many designer's solutions of RANDOM GENERATORS in the embedded microelectronics area. The basic approach is to read a counter whose input frequency is not synchronised and higher than the frequency of reading.

In microcontroller applications a Random Generator could be realized using the software resources of two timer/counters. This application proposes one implementation of the PIC12C509 as a random generator. The design solution could be incorporated in slot machines, security systems and the like. TMR0 in Counter mode is used as a counter generating random code. It varies from 0 to 255 binary values. The PIC12C509 may be connected to outside environment as shown on the figure (e.g. to 8-bit microprocessor). The processor reads random code in two cycles, first the MSB nibbles, second the LSB nibbles. The FIRST NIBBLE/SECOND NIBBLE signal initiates a fetching procedure. After every cycle the program code changes the prescaler 's contents. The READY signal indicates the synchronisation of data transfer.

FIGURE 1:

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NOTES: