US005577235A

United States Patent [19]

Mitra

[11] Patent Number: 5,577,235

[45] Date of Patent: Nov. 19, 1996

[54] **MICROCONTROLLER WITH MULTIPLE TIMING FUNCTIONS AVAILABLE IN A SINGLE PERIPHERAL MODULE**

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[21] Appl. No.: **298,775**

[22] Filed: **Aug. 31, 1994**

[51] **Int. Cl.**[6] **G06F 9/22**; G06F 19/00

[52] **U.S. Cl.** **395/559**; 364/DIG. 2; 364/925.6; 364/926.9; 364/933.7

[58] **Field of Search** 395/550

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[57] **ABSTRACT**

A microcontroller chip with a central processing unit (CPU) is adapted to control an external system with which the device is to be installed in circuit. The microcontroller chip includes an on-chip peripheral universal timing function module with a register for storing a value selected to signify a distinctive event in a waveform. A timer generates a series of values as a function of time as a measure of the value selected to signify the distinctive event. The register and the timer are coupled to a pin of the microcontroller chip on which said waveform is to be applied. Equality between the values in the timer and the register signify the distinctive event as one of a capture and a compare of an event in the waveform, to generate an interrupt to the CPU. The register is selectively split into separate master and slave registers for automatic synchronization of the transfer of a value entered into the master register to the slave register with a repetitive boundary of the waveform, to provide selective pulse width modulation of the waveform.

10 Claims, 3 Drawing Sheets

