Control of an Embedded System via Internet

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ABSTRACT

This paper presents our experience with a complete multimedia educational program of dc servo drives for distant learning. The program contains three parts: animation, simulation, and Internet-based measurement. The animation program helps to understand the operation of dc motors as well as its time- and frequency-domain equations, transfer functions, and the theoretical background necessary to design a controller for dc servo motors. The simulation model of the dc servo motor and the controller can be designed by the students based on the animation program. The students can also test their controllers through the Internet-based measurement, which is the most important part from an engineering point of view. Students can then perform various exercises such as programming the D/A and A/D cards in the embedded system and designing different types of controllers. First, a simple PI controller can be designed, but advanced students can also design more sophisticated controllers such as the sliding mode controller. After the measurements are executed, the students can download the measured data and compare them to the simulation results.

INDEX TERMS

REFERENCES

CITING DOCUMENTS