EXPERIENCE WITH THE NEW DIGITAL RF CONTROL SYSTEM AT THE CESR STORAGE RING

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Abstract

A new digital control system has been developed, providing great flexibility, high computational power and low latency for a wide range of control and data acquisition applications. This system is now installed in the CESR storage ring and stabilizes the vector sum field of two of the superconducting CESR 500 MHz cavities and the output power from the driving klystron. The installed control system includes in-house developed digital and RF hardware, very fast feedback and feedforward control, a state machine for automatic start-up and trip recovery, cw and pulsed mode operation, fast quench detection, and cavity frequency control. Several months of continuous operation have proven high reliability of the system. The achieved field stability surpasses requirements.

NO SUBMISSION RECIEVED