

Microcomputer system for a digital correlation receiver

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A microcomputer system based on RCA 1802 microprocessor was developed for controlling an "on line Fourier transform processor". This processor is used to obtain the brightness distribution map from different correlation coefficients measured on an antenna array comprising of long east-west element of 1.38 km length and 90 north-south elements extending 0.5 km in the perpendicular line at Gauribidanur. The computer controls an incremental magnetic tape recorder where computed brightness distribution values are stored for further processing and also displays brightness distribution map on a TV monitor. In the OFF line mode, the computer is used to set the initial parameters for the Fourier transform processor like beams to be computed, pre- and post-integration controls and the type of Grading function used for various correlation coefficients. The computer is also used to store the Grading tables and phase correction table necessary to correct the measured correlation coefficients. Delays necessary for various interferometer elements in order to keep the delay decorrelation within reasonable values are also computed and set on the various interferometer channels of the receiver.