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The abstract: In this article one of optional versions of linking of a radar channel from a computer of a workstation of the operator is submitted. The pattern both structure of the controller of a reception and conversion of the information going from a radar of a survey type is reviewed.

The problem of input of the radar information in a computer has arisen at developing a workstation of the operator of the modern radar station of all-around view. It was required to enter in a computer a normalized echo-signal going from a system of a digital signal processing (DSP) by the survey radar station and to convert it in the Cartesian coordinate system.

The normalized echo-signal represents binary-quantized impulses as digital binary sequence [1], the principle of formation is shown in a fig. 1.

Except for echo-signals from a system DSP in the digital series code the value of azimuth of the antenna goes. As the modern display devices of radar information have rectangular bitmap, it is necessary to convert coordinates of the detected targets in the Cartesian system and to enter the converted information into a computer storage. Let's estimate a volume and speed of receipt of the information. For survey radar stations in due course of view from 3 up to 10 with, quantity of a discrete on distance from 1000 up to 4000, at 16 digit code of azimuth of the antenna the volume radar information reaches 250 Mbit for the view, and speed of receipt 83,3 Mbit/s. In relation to a computer such value of a transfer rate, interface of linking with a system DSP are nonstandard, therefore there is a necessity of creation of the specialized controller for input radar information in a computer. The controller of a reception and conversion radar information, the skeleton diagram which one is shown in a fig. 2, is intended for association of the information going from primary and secondary channels of the radar station, and formation of a file of the deciphered ranges (reception of the item code of a range and code of a position of the antenna, conversion them in the Cartesian coordinate system). The converted information is transmitted in a computer in direct memory access mode to memory (DMA). In the controller two processors TMS320C30 will be used [2].

Principle of operation of the controller of a reception and conversion radar information following. On a signal of the begin of work range the device of a reception of an input information #9 executes a reception of echo-signals and record as a data block in the buffer RAM. The address in the buffer RAM corresponds current discrete of a distance. On completion of a reception of echo-signals from i of scanning the data block in a DMA mode corresponds in the processor #10 for conversion from polar coordinates to rectangular coordinates under the formulas: $x = D \cos B$, $y = D \sin B$, where D a present range; B current azimuth. The code of azimuth of the antenna B , going in the device of a reception of an input information, is indispensable for calculus of values $\cos B$ and $\sin B$ on known algorithms [3]. The computed coordinates of echo-signals correspond in one of the RAM (#4, #7). Two RAM are indispensable for separation of processes of calculus of coordinates of echo-signals and transfer them in a DMA mode in the RAM of a computer. The size of the buffer RAM is selected outgoing from a delay tolerance of a injection of a source information. On filling of one RAM of converted coordinates and reading of the information from the second RAM in a computer (with the help of the processor #3 through the conditioner of the system bus of a computer #1), the arbiter of access to the RAM #5 changes their operational mode. In the conditioner of the system bus of a computer there is a register of a condition, in which one enter the name operational mode indispensable for calculus of coordinates of echo-signals. The call signals (echo-signals of a secondary channel and two digits of identification) are received similarly to echo-signals, but at calculus of coordinates the indispensable delay on azimuth is entered depending on operational mode of a complex of secondary radar. The delay can make from 0° up to 180° .

The controller, described in the given activity, of a reception and conversion radar information realized and will be used in the automated system of displaying radar information in a structure of a workstation of the radar operator of all-around view.

The list of literature:

1. Tuchkov N.T. The automated systems and radio electronic controls an air traffic. - M.: Transport, 1994. - 368 p.
2. Third-generation TMS320C30 User's Guide. - Texas Instruments, 1987.
3. Demidovich B.P., Maron I.A. A fundamentals of calculus mathematics. - M.: Fizmatgiz, 1963. - 660 p.