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Means of Maintenance of Digital Stream High Reliability for DES on the MTD Decoder Basis

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As it is known, effective data transmission at distant Earth sensing (DES) is organized so that average bit error probabilities in digital streams did not exceed size 10^{-6}. In many cases, it is especially at use of preliminary compression methods for the initial data, much more higher reliability is required.

Most effectively the problem of high reliability providing is solved by methods of noiseproof coding. In the report results of realization of the coder and the decoder for systems DES constructed on base PLIS Xilinx, providing required levels of reliability are considered on the basis of methods of multithreshold decoding (MTD). It is shown, that speeds of data transmission and MTD decoding make 100 Mbit/s and more. Thus coding gain (CG) from application the codes exceeding 7 dB may be achieved. Characteristics created in SRI of the Russian Academy of Science MTD decoder device for research of characteristics are described. Characteristics MTD decoder for DES for the speed up to 400 Mbit/s are considered.

It is shown, that, as well as authors of the report in other publications marked, coding of the channel and a source already now can at 15-20 time, and in the near future and up to 40 and more times increases power efficiency or speed of data transmission in DES systems through channels and at carrying out of experiments in far the Space.

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