

Digital images processing and transmission in the university microsatellite

D. G. Bodyan, G. K. Bodyan, G. F. Sorokin, T. V. Shestakov

<https://ieeexplore.ieee.org/document/5293113>

Abstract

The block diagrams of the digital image processing and transmission subsystem are presented. CMOS-sensor for image capture is used. The matroid correcting codes and coded modulation are applied. Simulink-model of the imager is elaborated, which allows determining the coding gain, equal to 5.4 dB, for admissible error probability, equal to 10^{-6} . This coding gain allows decreasing the power consumption of the high-frequency transmitter of micro-satellite in 3.46 times.

Keywords: digital image processing and transmission subsystems, matroid correcting codes, coded modulation, imagers