

Abstract

Optical-electronic information-measuring system

Scope of work (number of pages) - 102

Number of illustrations - 52

Number of tables - 24

The number of sources in the list of references - 18

Actuality of theme. The development of the instrument industry has led to a demand for instrumentation and control systems. Control systems include the information-measuring opto-electronic system described in this paper. Optical instruments, and more specifically video cameras, have a wide range of applications, some of which are military, scientific and technical centers and research laboratories, the domestic sphere, and the like. Requirements for digital image registration systems are variable, but the main criteria are the quality of materials / assembly, compliance with the manufacturers specified characteristics (passport data). As practice shows, the percentage of discrepancy given by the characteristic data among the manufacturers of devices and devices of image registration is quite significant, and if in the personal sphere for personal use, the discrepancy of the camera with the given characteristics will be only cause for frustration of the user and will carry nothing but deception of hopes, then research, or, for example, military, serious deviations from the expected results pose a direct threat to life, etc. That is why the expediency of having systems of control of conformity of real characteristics is given is actual!

The purpose and objectives of the study. The purpose of the work is to evaluate the image quality of digital camcorders with the help of a designed stand and developed methodology.

The above goal can be achieved by solving scientific and engineering tasks.

The scientific task is to improve the methods of measuring the spectral characteristics of the sensitivity of digital video cameras. **The engineer's task** is to develop a workable stand and techniques for measuring and processing results.

The object of study is the receiving channel of digital video cameras, and the subject of the study is the procedure for determining the spectral characteristics of the digital video cameras.

Research methods. To accomplish the set goals, it is necessary to use the provisions of geometric and physical optics, methodology of designing devices and their components, apply computer modeling skills, use basic knowledge of microprocessor technology.

Scientific novelty of the obtained results. Based on the currently available digital video camera image quality assessment methods, systems and tools, the need for an alternative tool to meet the industry's needs has been identified.

Publications. According to the results of study accepted for publication the following scientific articles and theses of conferences:

1. Andreev A.A., Kravchenko I.V. "Features of Signal Processing in Phase-Modulated Systems" / XII Scientific and Practical Conference of Students, Graduate Students and Young Scientists "A Look into the Future of Instrumentation" - Kyiv, 2019.
2. Andreev A.A., Kravchenko I.V. "ASSESSMENT OF SIGNAL PARAMETERS IN OPTIC-ELECTRONIC SYSTEMS WITH HARMONIC MODULATION" / IX International Scientific and Practical Internet Conference "Modern Movement of Science" - Dnipro, 2019.
3. Andreev A.A., Kravchenko I.V. "DIGITAL ONE-PARAMETRIC MODEL OF OPTICAL - ELECTRONIC INFORMATION AND MEASUREMENT SYSTEM" / XXVIII International Internet Conference "WORLD DEVELOPMENT OF SCIENCE" - Kyiv, 2019.