Minimization of Color Errors in Television Receivers Using Neural Networks

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Minimization of color errors in television receivers due to different display white set-up and primaries from NTSC standards was investigated. Neural networks, implemented with NeuralWorks software, were the proposed solution. Different structures of neural networks were built and tested with different training presentations. The best result was obtained with a backpropagation neural network with one hidden layer of seven processing elements. About 70% of color errors were reduced. The color error reduction was also tested with a video graphics system. Color measurement was made with this video color test system. Color measurement was made with this video color test system set-up that included a personal computer, a video graphics board and associated software called STAGE and ONSTAGE, and image data processing programs written in C++, an analog monitor, and a chroma meter. Both the simulation chromaticity diagram and the video color test system demonstrated the effects of the neural network.