

DEVICE AND METHOD OF IMPROVING THE PERCEPTUAL LUMINANCE NONLINEARITY - BASED IMAGE DATA EXCHANGE ACROSS DIFFERENT DISPLAY CAPABILITIES

ABSTRACT

A handheld imaging device has a data receiver that is configured to receive reference encoded image data. The data includes reference code values, which are encoded by an external coding system. The reference code values represent reference gray levels, which are being selected using a reference grayscale display function that is based on perceptual non-linearity of human vision adapted at different light levels to spatial frequencies. The imaging device also has a data converter that is configured to access a code mapping between the reference code values and device-specific code values of the imaging device. The device-specific code values are configured to produce gray levels that are specific to the imaging device. Based on the code mapping, the data converter is configured to transcode the reference encoded image data into device-specific image data, which is encoded with the device-specific code values.

Fig. 5