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Data-Driven Symbol Definition for Color Shift Keying in Screen Camera Communications

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Abstract:
Aiming to increase the data rate in screen camera communications, we intend to define symbols to be used in an M-ary color shift keying modulation scheme. With regard to the R, G, B format of a JPEG image, we generate arrays of colors and acquire their image with the back camera of an smartphone. Then, we select those colors with the minimum error distance and elect the desire set of colors from their constellation space. Given the grouping pattern of the processed data, we believe it is a valid method for defining symbols in CSK modulation, although it needs to be validated for higher order modulation schemes.

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I. Introduction

Screen camera communications emerges as the next promising technology in the field of optical communications. It still needs to face slow refresh rates from screens and slow ima

s, but history demonstrates us that many impossible technologies in the past are realities at present times.

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