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Method of Colors and Secure Fonts Used for Source Shaping of Valuable Emissions from Projector in Electromagnetic Eavesdropping Process

Tytuł

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Abstract: The protection of information processed electronically involves a large number of IT devices from computer sets or laptops to monitors, printers, servers, etc. In many cases, classified information processing might be associated with the use of projectors, which are an indispensable element of meetings for a limited group of people. Such devices are connected to computers through interfaces of various analogue and digital standards and can become an additional source of unwanted emissions, and the distinctive features of these emissions allow the information displayed to be unwantedly reproduced. This paper offers evidence of the existing threat related to electromagnetic infiltration of several projectors, by showing images reconstructed from registered revealing emissions. The paper presents an analysis of several solutions that can be used to reduce the level of infiltration susceptibility of projectors or to highlight this property in the device assessment process. The possibilities of using special computer fonts and the so-called method of colors—background color and text color—is analyzed. The tests were carried out on randomly selected projectors in two independent laboratories, and, based on these results, a number of interesting conclusions have been highlighted at the end.

Keywords: electromagnetic eavesdropping; electromagnetic infiltration; projector; information protection; revealing emission; valuable emission

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