

Wojskowy Instytut Łączności - Państwowy Instytut Badawczy

<https://www.wil.waw.pl/wil/publikacje/baza-publicacji/r170175595,Influence-of-the-method-of-colors-on-levels-of-electromagnetic-emissions-from-vi.html>
2022-10-05, 00:14

Influence of the method of colors on levels of electromagnetic emissions from video standards

Tytuł

Influence of the method of colors on levels of electromagnetic emissions from video standards

Typ publikacji

[Artykuł](#)

Rok

2019

Data dokładna

2019

Autorzy słownie

Autorzy

[Kubiak Ireneusz](#)

ISBN/ISSN

ISSN: 0018-9375, e-ISSN: 1558-187X

Informacje dodatkowe

IEEE Transactions on Electromagnetic Compatibility, Vol.61,

No.4, 2019, str. 1129-1137

DOI: 10.1109/TEMC.2018.2881304

Abstract: Every electronic device that processes information becomes a source of spurious emissions. These emissions can be used in the process of electromagnetic eavesdropping, resulting in the possibility of obtaining information in a non-invasive manner. The graphic tracks of information systems are particularly sensitive sources of such emissions. This paper analyzes the levels of electromagnetic interference from two graphic

standards: video graphics array (VGA) and digital video interface (DVI). The DVI standard, due to the assumptions made by the Digital Display Working Group, was to replace the analog VGA standard and increase the electromagnetic safety of transmitted graphic data. However, the reality and ongoing research did not confirm this. The DVI digital standard, as a source of spurious emissions, must be protected in the same way as the VGA standard. This paper analyzes the impact of the color method on levels of electromagnetic interference for the two considered graphic standards. The color method (the right color for the background and text) is one of the solutions that can counteract the process of electromagnetic eavesdropping. The proper selection of colors can limit the level of electromagnetic interference but only in the case of the VGA standard (change in the amplitude of the voltage of the electrical signal). The DVI standard, due to a different way of color coding (the value of voltage amplitude of the electrical signal is constant; the shape of the signal changes), does not show any relation between the choice of background colors and text or the level of generated electromagnetic interference. Very often, this interference has the characteristics of information being processed and becomes valuable in the process of electromagnetic infiltration. That is why, the analog VGA standard is still widely used in information systems, where the most important aspect is the protection of information against electromagnetic penetration.

Keywords: Compromising electromagnetic emanations, digital video interface, electromagnetic eavesdropping, information infiltration channel, information leakage, information security, tempest, video graphic arrays.

Powiązane publikacje

-

Adres url strony

<https://ieeexplore.ieee.org/document/8550657>

Plik

