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Abstract: The electromagnetic protection of IT devices includes a number of organizational and technical measures aimed at ensuring control over radiated and conducted revealing emissions. This is of particular importance for ensuring information security in wireless communication and the processing of data presented in graphic form. In each of these cases, the occurring electromagnetic emissions pose the risk of a lack of electromagnetic immunity to the so-called eavesdropping process based on forming revealing emissions. Included in the elements of the security chain preventing electromagnetic eavesdropping on wireless communication and the devices building such systems are activities related to the determination of the Technical Device Security Level (TDSL) or its class. The above is related to the performance of electromagnetic emissions tests and identifying which of them must be treated as revealing emissions, which are only disturbances and do not threaten the security of the processed information. It is intuitively understandable that it is particularly important to ensure the security of interfaces that process video data. The nature of the electromagnetic emission signals generated by these interfaces means that the related information can be intercepted with the use of relatively simple methods, and under favorable circumstances even with the use of a receiving device not very technologically advanced. In the case of the electromagnetic safety assessment of video devices, common practice is therefore activities aimed at reconstructing information related to the video signal. This requires the parameters of the reconstructed image appropriate for the eavesdropped device operation mode and the conditions of recording the revealing emission signals to be determined. The article presents the results of works related to the analysis of the possibility of using spectral analysis methods (Fast Fourier FFT transform and Chirp-Z transform) to automate the process of determining the above-mentioned parameters in the case of reproducing images from emission signals recorded by using the ADC analog-to-digital converter.

Keywords: Fourier transform; Chirp-Z transform; wireless communication; rasterization; graphic display; reveal emission; protection of information; electromagnetic eavesdropping; AWGN noise

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