Possibilities of electromagnetic penetration of displays of multifunction devices

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Abstract: A protection of information against electromagnetic penetration is very often considered in the aspect of the possibility of obtaining data contained in printed documents or displayed on screen monitors. However, many printing devices are equipped with screens based on LED technology or liquid crystal displays. Options enabling the selection of parameters of the printed document, technical settings of the device (e.g., screen activity time) are the most frequently displayed information.

For more extensive displays, more detailed information appears, which may contain data that are not always irrelevant to third parties. Such data can be: names of printed documents (or documents registered and available on the internal media), service password access, user names or regular printer user activity. The printer display can be treated as a source of revealing emissions, like a typical screen monitor. The emissions correlated with the displayed data may allow us to obtain the abovementioned information. The article includes analyses of various types of computer printer displays. The tests results of the existing threat are presented in the form of reconstructed images that show the possibility of reading the text data contained in them.
Keywords: printer display; electromagnetic safety; information leakage; electromagnetic eavesdropping; sensitive emission; protection of information; side channel attack

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