

American Aires Inc.  
Research and Development department

**REPORT**

**R&D: Evaluation of the effectiveness of the Aires Shield Pro  
(2018 model)**

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The protective properties of the Aires Shield Pro are due to its ability to coherently convert the technogenic electromagnetic radiation of mobile communications without weakening the original signal [1], [2].

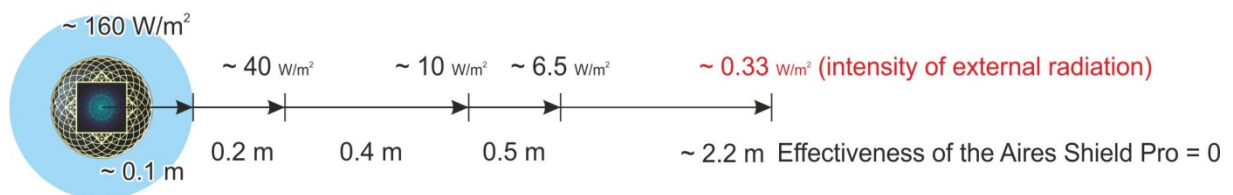
An electromagnetic field converted using the Aires Shield Pro is a stationary coherent wave superposition with a corresponding energy density characterized by intensity  $I$  (see table). Calculations were made for the frequency 2.4 GHz, which is standard for Wi-Fi radiation and 4G mobile communications. The effectiveness of the Aires Shield Pro was estimated based on the intensity of the field transformed into a coherent form, determining the zone of maximum action.

The stable electromagnetic field generated by the Aires Shield Pro has several fractal levels due to the number of ring elements in the topological circuit of its microprocessor and the size of the circuit itself [3]. Outside the zone of maximum action, the density of the highly coherent field begins to decrease and, accordingly, the effectiveness of the device decreases.

**Table of the basic parameters of the Aires Shield Pro**

<b>Diameter of the C16S microprocessor circuit</b>	0.007 m
<b>Number of elements in the topological circuit of the microprocessor</b>	83521
<b>Device size</b>	0.017 m
<b>Radius of the maximum effective zone of influence</b>	0.102 m
<b>Intensity <math>I</math> of the EM field in the maximum effective zone</b>	162 W/m <sup>2</sup>

Fig. 1 shows the scale of the drop in the Aires Shield Pro's effectiveness using the example of its interaction with Wi-Fi radiation at a frequency of 2.4 GHz ( $I \sim 0.33 \text{ W/m}^2$ ).



*Fig. 1. Scale of the drop in the effectiveness of protection from the Aires Shield Pro.*

When the protective electromagnetic field's intensity decreases to the parameters of the intensity of external radiation, the Aires Shield Pro's effectiveness drops to zero.

If there are several external sources of radiation, it is necessary to additionally use a more powerful Aires device (Aires Defender Pro or Aires Guardian) or several Aires Shield Pro devices, since the external radiation's total intensity dramatically reduces the Aires Shield Pro's zone of effective influence.

The decrease in effectiveness is determined by the decrease in the intensity of the protective EM field, which is inversely proportional to the square of the distance from the device (Aires Shield Pro) and is estimated using the following formula:

$$I \sim \frac{1}{R^2} .$$

At a distance of 0.75 m from the center of the Aires Shield Pro, the intensity of the protective field reaches a value at which the effectiveness drops to a critical level (see Figure 2), determining the boundary of a highly coherent spherical field with a diameter of 1.5 m.

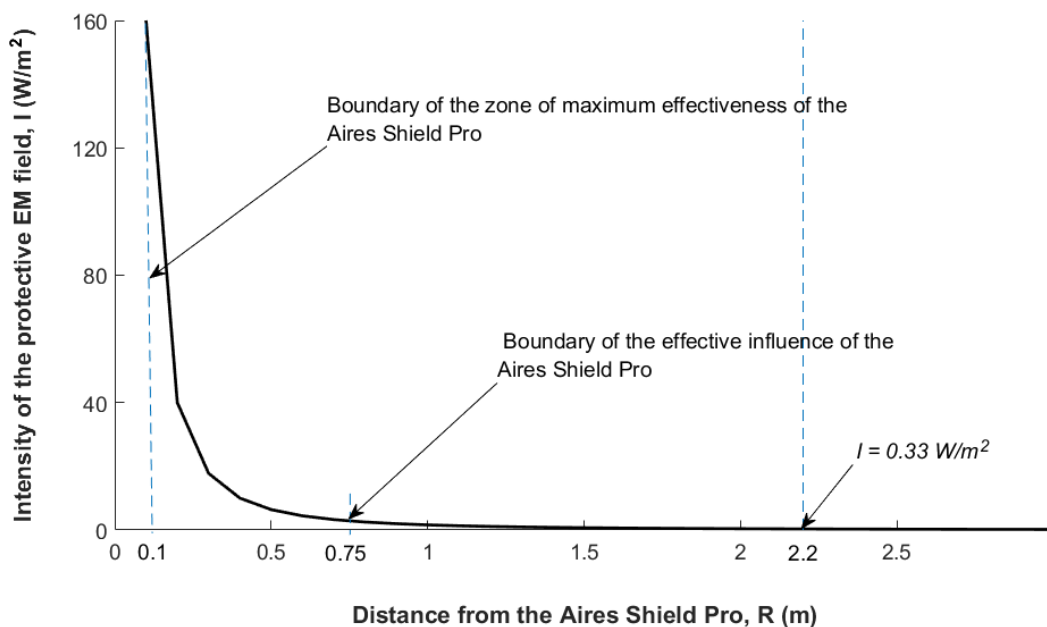


Fig. 2. Graph of the effectiveness of the Aires Shield Pro as a function of distance.

Thus, the recommended coverage diameter of the effective influence of the Aires Shield Pro is ~ 1.5 m.

## BIBLIOGRAPHY

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2. Kopyltsov A.V., Korshunov K.A., Lukyanov G.N., Serov I.S. Distributed computing of interaction of electromagnetic radiation with a structured surface, Regional Informatics and Information Security., 2016.
3. Serov I.S., Korshunov K.A., Soltovskaya I.A., Shamko T.V., Kopyltsov A.V., A. Yukna R&D: Calculation of the strength and intensity of the electromagnetic field during the interaction of electromagnetic radiation at a frequency of 2.4 GHz (Wi-Fi) with an Aires C16S resonator (microprocessor), which is used in the Aires Shield Pro 2018 (2018 model).