

American Aires Inc.
Research and Development department

REPORT

R&D: Evaluation of the effective range of the LIFETUNE FLEX (2022 model) at a frequency of 4.9 GHz (Wi-Fi 5 G)

R&D：評估 LIFETUNE FLEX（2022 年型）在 4.9 GHz（Wi-Fi 5G）頻率下的有效範圍

The protective properties of the LT FLEX are due to its ability to coherently convert the technogenic electromagnetic radiation of mobile communications without weakening the original signal.

LT FLEX 的防護特性來自於它能夠將行動通訊的人工電磁輻射相干地轉換，而不削弱原始訊號。

An electromagnetic field converted using the LT FLEX is a stationary coherent wave superposition with a corresponding energy density characterized by intensity *I* (see table). Calculations were made for the frequency 4.9 GHz , which is standard for Wi-Fi radiation and 5G mobile communications. The effectiveness of the LT FLEX was estimated based on the intensity of the field transformed into a coherent form, determining the zone of maximum action.

使用 LT FLEX 轉換後的電磁場是一種駐波相干疊加，其對應的能量密度以強度 *I* 表示（見表）。計算是針對 4.9 GHz 頻率進行，該頻率為 Wi-Fi 輻射與 5G 行動通訊的標準。LT FLEX 的有效性是根據被轉換為相干形式的場強來估算，以確定最大作用區域。

The stable electromagnetic field generated by the LT FLEX 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. Outside the zone of maximum action, the density of the highly coherent field begins to decrease and, accordingly, the effectiveness of the device decreases.

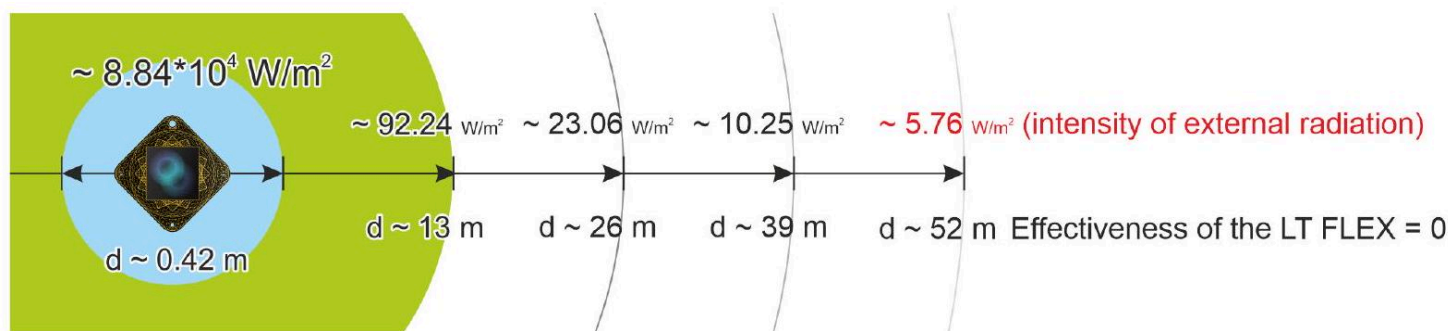
由於其微處理器拓撲電路中環形元件的數量及電路本身的尺寸，LT FLEX 所產生的穩定電磁場具有多個分形層級。在最大作用區域之外，高相干場的密度開始下降，相應地裝置的效能也會降低。

Table 1: Table of the basic parameters of the LT FLEX

表 1：LT FLEX 基本參數表	
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Diameter of the 64P1S5G microprocessor circuit 64P1S5G 微處理器電路的直徑	0.02 m
Number of elements in the topological circuit of the microprocessor 微處理器拓撲電路中的元件數量	4161
Device size 裝置尺寸	0.035 m 0.035 公尺
Diameter of the maximum effective zone of influence 最大有效影響區域的直徑	0.42 m 0.42 公尺
Recommended coverage diameter of the effective influence 建議的有效影響覆蓋直徑	13 m
Intensity <i>I</i> of the EM field in the maximum effective zone for the frequency 4.9GHz(5G) 在最大有效區域內，頻率為 4.9GHz(5G) 時電磁場的強度 <i>I</i>	$8.84 \cdot 10^4 \text{ W/m}^2$

Fig. 1 shows the scale of the drop in the LT FLEX’s effectiveness using the example of its interaction with Wi-Fi radiation at a frequency of 4.9 GHz ($I \sim 5.76 \text{ W/m}^2$).

圖 1 顯示 LT FLEX 在與頻率為 4.9 GHz 的 Wi-Fi 輻射 ($I \sim 5.76 \text{ W/m}^2$) 互動時，其效能下降的範圍示意。



When the protective electromagnetic field's intensity decreases to the parameters of the intensity of external radiation, the LT FLEX's effectiveness drops to zero.

當保護性電磁場的強度降至與外來輻射強度相當時，LT FLEX 的效能將降至零。

If there are several external sources of radiation, it is necessary to additionally use a more powerful devices (LT ZONE or LT ZONE MAX) or several devices LT FLEX, since the external radiation's total intensity dramatically reduces the LT FLEX's zone of effective influence.

如果存在多個外來輻射來源，則需另外使用更大功率的裝置（LT ZONE 或 LT ZONE MAX）或多台 LT FLEX，因為外來輻射的總強度會劇烈縮小 LT FLEX 的有效影響範圍。

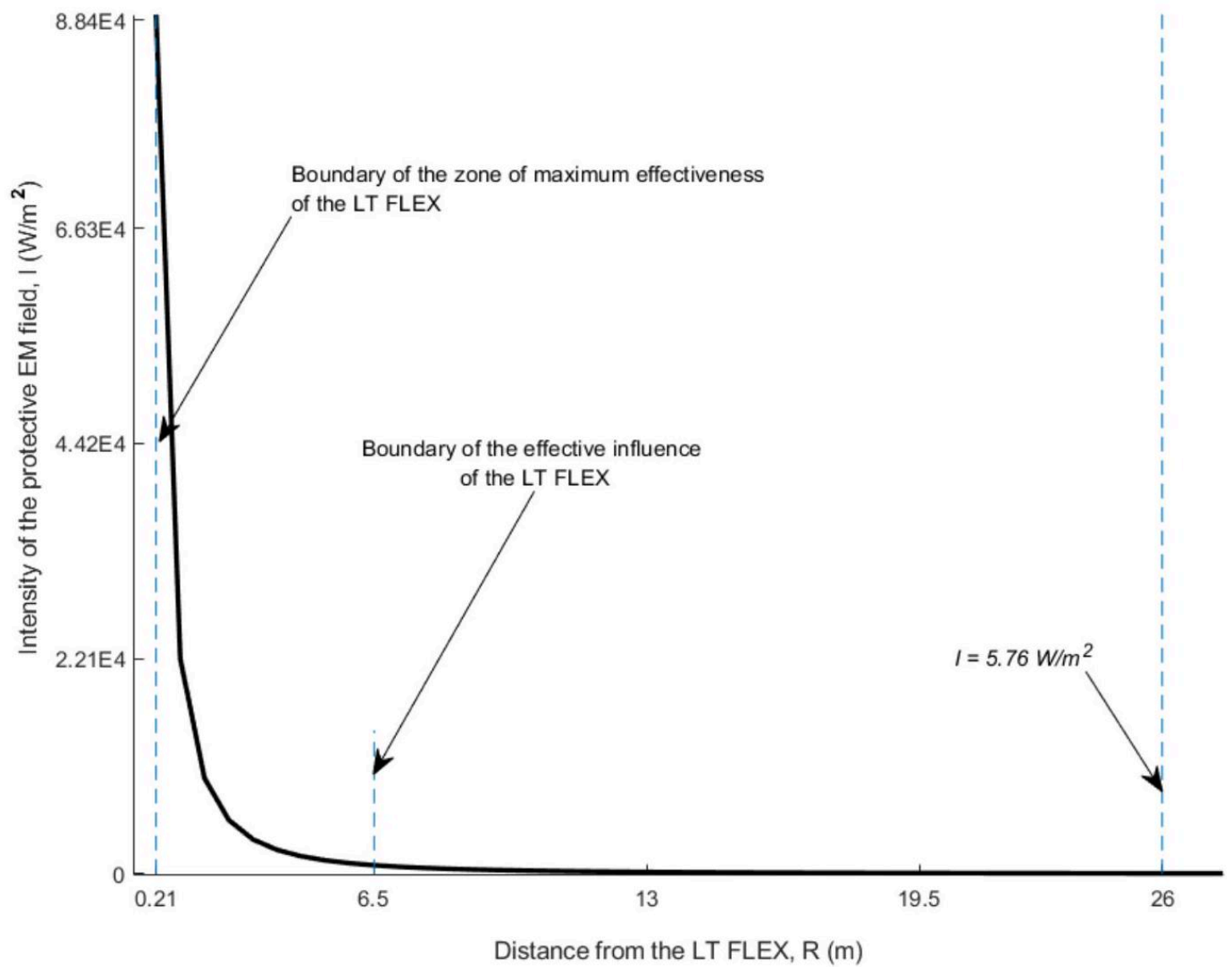
The decrease in effectiveness is determined by the decrease in the intensity of the protective EM field, which is inversely proportional to the square of the distance from the device (LT FLEX) and is estimated using the following formula:

效能的下降由保護電磁場強度的減弱所決定，該強度與距離裝置（LT FLEX）的距離的平方成反比，可用下列公式估算：

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

At a distance of ~ 6.5 m from the center of the LT FLEX (for EMR at a frequency of 4.9 GHz), the intensity of the protective field reaches a value at which the effectiveness drops to a critical level (see Fig. 2), determining the boundary of a highly coherent spherical field with a diameter of ~ 13 m.

在距離 LT FLEX 中心 ~ 6.5 m 處（對於頻率為 4.9 GHz 的電磁輻射），保護場的強度降至使效能跌至臨界水準的數值（見圖 2），這決定了一個高度相干球形場的邊界，其直徑為 ~ 13 m。



Thus, the recommended coverage diameter of the effective influence of the LT FLEX is ~ 13 m.

因此，建議的 LT FLEX 有效影響覆蓋直徑為 ~ 13 m。

The indicated distances are reached in open space.

所示距離是在開放空間中達到的。