

## PHOTOVOLTAIC SOLAR CELL LIKE RECEIVER FOR ELECTROMAGNETIC WAVES IN VHF-UHF BANDS

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### Abstract

*This paper describes the photovoltaic solar cell like receiver for electromagnetic waves in VHF-UHF bands and the application of photovoltaic solar cell in planar antenna structures. The radiating patch element of a planar antenna is replaced by a solar cell. Furthermore radiating slots are built due to the cell spacing in a solar cell array. The original feature of a solar cell (DC current generation) remains, but additionally the solar cell is now able to receive and transmit electromagnetic waves, because the electromagnetic radiation is an important source of interference on the useful signals in the electric and electromagnetic devices.*

**Key words :** solar cells,  
electromagnetic waves, antenna,  
measurements, receiver.

### 1. Introduction

A sustainable development is conditioned by preserving the environment quality, by the study and diminishing of the polluting effects. A special polluting environment category is the electromagnetic pollution which has an impact both on the aparata and on the electric/electromagnetic devices and on plants and living organisms.

An electric or electronic device is submitted to an electromagnetic aggression by the sources of perturbations from the environment and the way this works can be more or less affected. On the other hand the electric device produces itself perturbations which affect other devices and electric aparata. The perturbation is an electromagnetic phenomenon which can

deteriorate the performance of a device or can affect in a disadvantageous way the living (substance). The electromagnetic interference (EMI – ElectroMagnetic Interference) is the result of a perturbation on an electric device. The Electromagnetic Compatibility (EMC) is the capacity of a electric system to work correctly in its electromagnetic field/environment without producing in its turn perturbations on other devices in this environment. The immunity of a device is the capacity to work accordingly in the presence of a perturbation. The susceptibility represents the loss of immunity.

The electromagnetic radiation is an important source of interference on the useful signals in the electric and electromagnetic devices. The sources of electromagnetic radiation are:

- fix radio broadcasting stations, tv, radar;
- mobile broadcasting stations used in telecommunications and the technological processes;
- energetic equipments where commutation is made with or without electric bow;
- atmospheric phenomena.

In CEM technique, the electromagnetic radiation is important from two points of view:

1. **Immunity.** It is necessary that an electric or electromagnetic device to work in good conditions in the presence of an electric field established by standards (CEI 801). For this purpose in the laboratory electromagnetic radiations are generated having a wide range of frequency (9 kHz...1 GHz) and the amplitude of an electric field is established to which the equipment still work.

# Photovoltaic Solar Cell Like Receiver For Electromagnetic

**Didier Musso**



**Photovoltaic Solar Cell Like Receiver For Electromagnetic:**

## Decoding **Photovoltaic Solar Cell Like Receiver For Electromagnetic**: Revealing the Captivating Potential of Verbal Expression

In a time characterized by interconnectedness and an insatiable thirst for knowledge, the captivating potential of verbal expression has emerged as a formidable force. Its ability to evoke sentiments, stimulate introspection, and incite profound transformations is genuinely awe-inspiring. Within the pages of "**Photovoltaic Solar Cell Like Receiver For Electromagnetic**," a mesmerizing literary creation penned by a celebrated wordsmith, readers set about an enlightening odyssey, unraveling the intricate significance of language and its enduring effect on our lives. In this appraisal, we shall explore the book's central themes, evaluate its distinctive writing style, and gauge its pervasive influence on the hearts and minds of its readership.

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