



MULTIFUNCTION NETWORK ANTENNA

Simplified supply circuit with control of the mutual coupling

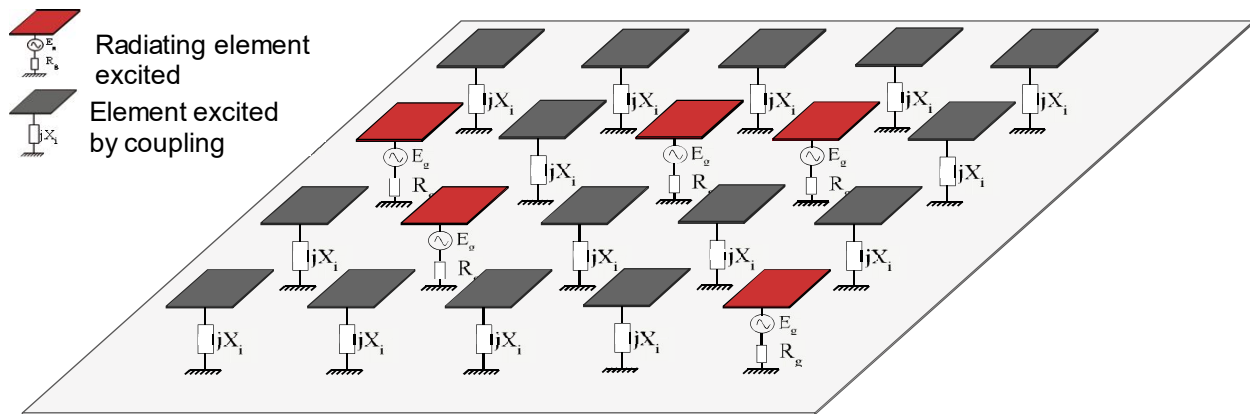


Figure 1: Schematic diagram of the antenna – Excited elements (in red) and non-excited elements loaded with complex impedances (in grey)

Invention overview

This invention deals with antenna system and electronics beam-forming. The system is simplified and made less expensive by powering only part of antennal elements.

Those who are not powered remain excited by mutual coupling with those powered (see Figure 1). The choice of distribution between the powered elements and those working by coupling as well as the characteristic of the coupling, allow to configure the radiation pattern of the antenna according to the desired performance.

The elements can present various access to generate several beams with orthogonality in frequency and / or polarization (multifunctional character

Potential applications

Antenna manufacturers, with low budgets for telecommunication satellite

Technological benefits

Innovative technology

Non-powered elements are excited by mutual coupling with the powered elements

The radiation pattern of the antenna system is configurable by the control of the power laws of excited elements and complex impedances of coupled elements

Allow design of one ou more reconfigurable (orthogonal) beams

A simple and efficient system

Better surface performance against a lacunar system

Circuit simplified and more compact power supply

Commercial benefits

A significant cost reduction

Flexible solution offering adjustable compromise between cost and performance of the antenna

Simple

Economic

Compact

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Patented invention, available under license