QR-Code Pixelated Antenna with Multi-Factor Authentication for Wireless and Security Applications

Quick response (QR) codes can be used for antenna applications, in addition to being used as information-sharing and security devices. QR-Code pixelated antennas present a game- changing solution for wireless communication and security applications. Their ability to facilitate efficient data transfer, compact form factor, compatibility with existing infrastructure, and enhanced security measures make them highly desirable for a wide range of applications, ranging from consumer electronics to industrial systems. The aim of this paper is to demonstrate the feasibility and success of QR code structures as antennas in wireless communication applications. It is designed on a low-cost FR4 substrate board. The suggested antenna configuration contains a modified coaxial-fed patch resonator with a QR pixelated configuration and a full ground plane providing a broad bandwidth of 8 to 9.6 GHz. The critical characteristics have been examined in simulations and sufficient return loss, radiation gain, levels are all achievable with the planned compact QR antenna design.

**Existing syatem:**

QR-Code Pixelated Antenna for wireless communication: QR-Code Pixelated Antennas have been used to create antennas that are small, efficient, and easy to manufacture. These antennas have been shown to be effective for wireless communication applications, such as wireless sensor networks and iot devices.

QR-Code Pixelated Antenna for RFID tags: QR-Code Pixelated Antennas have been used to create RFID tags that are small, cheap, and easy to read. These tags have been shown to be effective for tracking objects and identifying products.

**Proposed system:**

A qr-code pixelated antenna-based mfa system for wireless communication networks: this system would use qr-code pixelated antennas to transmit a unique qr code to each user's device. When a user attempts to access a network, they would be required to scan the qr code with their device and enter their password. This would provide an additional layer of security by requiring users to enter multiple factors of authentication.

A qr-code pixelated antenna-based physical unclonable function (puf) for security applications: pufs are physical devices that generate unique and unclonable identifiers. Qr-code pixelated antennas could be used to create pufs that are easy to manufacture and integrate into electronic devices. These pufs could be used to secure devices and applications from unauthorized acces

**SYSTEM SPECIFICATION:**

**HARDWARE REQUIREMENTS:**

* **System :** Intel i7
* **Hard Disk :** 1 TB.
* **Monitor** : 14’ Colour Monitor.
* **Mouse :** Optical Mouse.
* **Ram :** 8GB.

**SOFTWARE REQUIREMENTS:**

* **Operating system :** Windows 10.
* **Coding Language :** Python.
* **Front-End :** Html. CSS
* **Designing :** Html,css,javascript.
* **Data Base :** SQLite.

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