

Radio wave reflector and backscatter communication method

Reflection of radio wave in the direction of incident radio wave

Overview

In backscatter communication such as radar or radio frequency identifier (RFID) system, the received power decreases with the communication distance. To extend the communication range, it is necessary to increase the radar cross section of the target in the case of radar, and to increase the tag antenna gain in the case of RFID system. However, in both cases, it is not easy to reflect radio wave toward the arrival direction because the target to reflect radar signal and the arrival direction of the signal to reflect are not known.

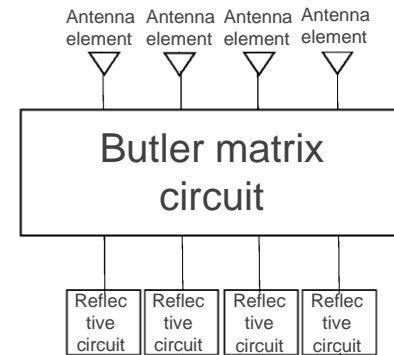
This invention is able to reflect radio wave in the direction in which the incident radio wave arrives by using a small radio wave reflector. This invention has an antenna element, a reflective circuit and a butler matrix circuit. When the reflection circuit receives an incident radio wave input from the antenna element via the butler matrix circuit, it sends out a reflected radio wave in the direction in which the incident radio wave arrived via the butler matrix circuit and antenna element. This small radio wave reflector allows radio wave to reflect in the direction in which the incident radio wave arrived.

Product Application

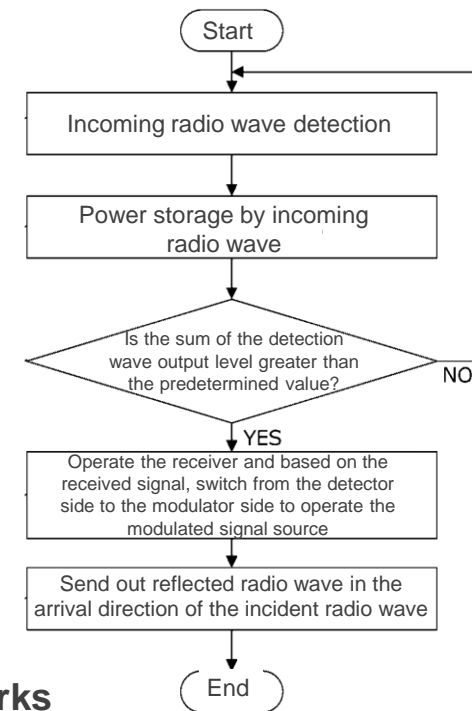
- Communication and sensing with artifacts that do not have communication function

IP Data

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Realize high gain sensor node with directional backscatter with extended communication



Related Works

[1]

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