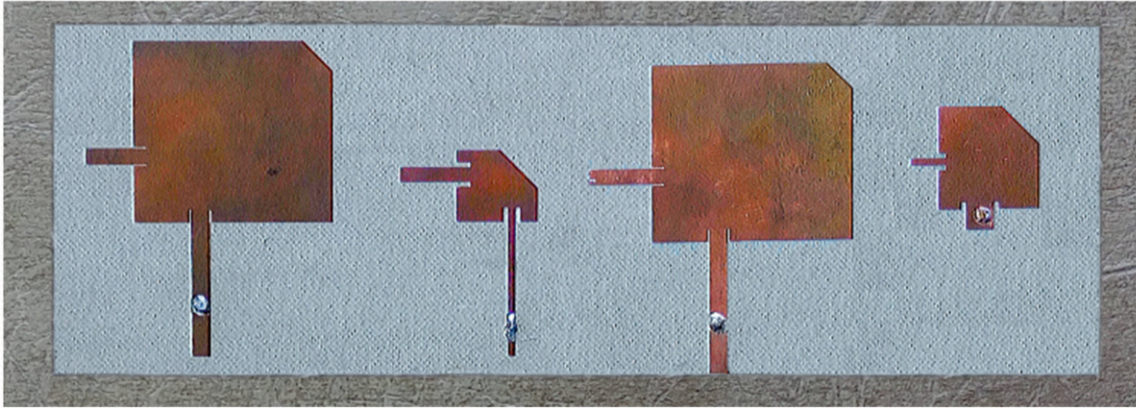
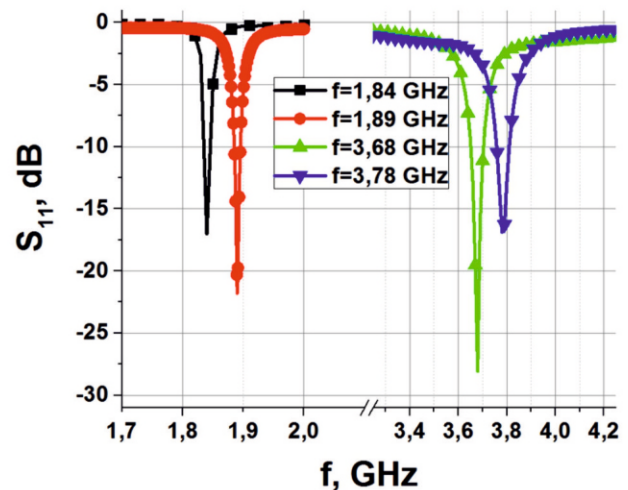


LABORATORY MODEL OF THE RECEIVING AND TRANSMITTING MICROWAVE ANTENNA MODULE



Areas of Application

A combined L-S-band antenna module is proposed. It consists of four rectangular patch antennas, two of which operate at the frequencies of the first harmonics (L-band, 1-2GHz), and two other ones at the frequencies of the second harmonics (S-band, 2-4GHz). The module proposed seems to be very attractive for different telecommunication applications as well as for studying various non-linear phenomena.



Advantages

Measured radiation patterns in the H- and E- planes of all the antennas are practically identical with the elevation angles of peak directivity close to the zenith. The mutual influence of antennas was studied and the minimum permissible distance between them has been determined (DX=13mm), at which the operation of each of antennas is not affected by the operation of other antennas, i. e. they are electromagnetically independent. Herewith, the obtained value of the transition coefficient $S_{12} < -50\text{dB}$ is sufficient to realize the operation of the antenna module in the transceiver mode.

Stage of Development

IRL3, TRL4. On request, manufacturing, customization, initial experimental analysis is carried out.

Specification

At the resonance frequencies, the reflection coefficient S_{11} does not exceed -35 dB for the L-band antennas with resonance frequencies 1.84 GHz and 1.89 GHz, and -25 dB for the S-band antennas with resonance frequencies 3.68 GHz and 3.78 GHz, respectively. The minimum allowable distance between the antennas is determined (DX=13mm), at which their mutual influence can be neglected ($S_{12} < -50\text{dB}$)

IPR Protection

IPR2

It is envisaged to submit or submit applications for obtaining security documents for industrial property rights in Ukraine

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