Phase Shifters and the Energy Internet

A mixed-integer nonlinear optimization framework is formulated for joint optimization of the active beamforming matrix, user power allocation, and STAR-RIS phase shift vectors, including ...

Abstract: Massive multiple-input-multiple-output (MIMO) systems provide efficient connectivity services for a large number of industrial Internet of Things (IoT) devices.

Moreover, the combination of phase shifters and switches offers significantly higher EE against conventional PS-only architectures, while nearly preserving spectral efficiency.

Solving this problem, we have proposed a tabu search (TS) based algorithm, which uses a genetic algorithm crossover feature to search for the new neighbor. Simulation results show that ...

In this paper, the authors propose a novel partially connected hybrid beamforming (PC-HBF) architecture, which employs variable phase shifters (VPSs) and constant phase shifters (CPSs) for ...

In order to set the phase of the lth phase shifter on the mth RF chain, and the select network of the switches in Fig. 1d according to FSS, the following procedure can be applied:

In this paper, we propose a novel Beamforming and Phase-shift Optimization Framework (BPOF) that jointly optimizes hybrid beamforming, RIS phase shift design, and the on-off control of ...

This Review summarizes the principles of phase shift engineered TENGs, and how it might further boost energy utilization efficiency and practicality.

In particular, satellite communication systems providing high-speed Internet connectivity utilize the K and Ka bands, which o er larger bandwidth compared to lower frequencies. This paper focuses on two ...

Abstract--This paper investigates the downlink achievable spectral efficiency (SE) and energy efficiency (EE) of massive MIMO for hybrid architectures based on phase shifters, where the base...

The most prevalent use for microwave phase shifters continues to be scanning directly- radiating or "reflectarray" phased-array antennas. That market continues to be dominated by military radar and ...

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