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Design of a C-band compact phase shifter for particle accelerators

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A phase shifter is a key component to tune the phase of RF power for accelerating structures in linear accelerators (linacs). This paper presents the design of a compact C-band variable phase shifter for our high-power test platform. It consists of a dual-polarization mode coupler and a movable short-circuited piston for adjusting RF phases. In order to isolate the coaxial port formed by the movable piston and the pipe a choke is introduced inside the piston. Through optimizations, the RF phase variation is simulated to be 20 degree/mm of piston moving distance.

Footnotes

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