

# Design and Simulation of Circular Waveguide Elbows Applicable in High Power Microwave (HPM) Coupling to Plasma

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## Key Achievements

- Investigation on high-power microwave (HPM) compatible waveguide elbows viz. Z-shaped, L-shaped, U-shaped and Pi-shaped is carried out using CST Microwave Studio at 3GHz operating frequency.
- U-shaped elbow provide good power transmission and reflection while Pi-shaped elbow maintaining the purity of  $TM_{01}$  mode as compare to others.
- Choice of the elbow configuration for any particular application should depend on the requirement, i.e. having the minimum power loss, or having the mode retained.
- U-shaped circular waveguide elbow fit for our required applications.