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## Improved Design of Klystron Beam Focusing System with Permanent Magnets

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Klystron beam focusing system with permanent magnets can increase reliability of RF power system and reduce its power consumption. A prototype magnet system with ferrite magnets was fabricated for a L-band 800 kW klystron. The power test of the klystron with the prototype magnet system has proved the feasibility of the prototype. However, multi-pole transverse magnetic field components might reduce peak output power compared with the electro-magnet.

In order to improve the performance of beam focusing systems with permanent magnets, new design concept of the focusing system has been studied. In this design, magnets are symmetrically arranged around the beam axis to reduce the multi-pole field component. In this presentation, the design procedures and designed focusing systems will be reported.

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