

# General Considerations on Quasi-Optical Mode Converters for Frequency Step-Tunable Gyrotrons

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Frequency step-tunable gyrotrons are of great interest for controlling instabilities in magnetically confined plasmas in large fusion reactors such as ITER. In order to get more information about the frequency behaviour of quasi-optical mode converters, different launchers will be discussed with respect to their advantages and disadvantages in use. In particular, different shaped cuts of conventional Vlasov-type launchers and advanced Denisov-type launchers with a deformed waveguide wall will be taken into account. In addition the radiated field from the launcher propagating through a mirror system will be examined and problems resulting from frequency-dependence will be indicated. For proving and demonstrating these considerations, some frequency-dependent numerical calculations of quasi-optical mode converters will be presented.