

**Long-Pulse                      1.3 GHz                      Magnicon\***,  
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06520, USA – The feasibility of magnicon amplifier as a  
RF source for TESLA collider is studied. The magnicon, a  
novel deflecting-beam microwave amplifier, has shown the  
capability of producing multi-mega-watt power with an  
efficiency above 70%. We present a design for 10 MW  
magnicon with a pulse length of 2 msec, repetition rate of  
10 Hz, gain > 40 dB, efficiency >70% and 1 MHz  
FWHM bandwidth. Detailed analytical and numerical  
studies are presented to determine the optimum electron  
beam optics, the magnicon deflection cavities and output  
cavity parameters and collector. The parameters achieved  
show that magnicon could be also an excellent option for  
driving high-power electron industrial accelerators, proton  
accelerators as a source of spallation neutrons, etc..

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