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FCC beam dump septum requirements and suitability of different septa technologies and topologies

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This article will describe the how the baseline design for the beam dump system septa is derived and provide further insight into the consequences of the septum technology choice for the extraction protection equipment (absorbers), for the dump kickers and for the required space in the lattice. Subsequently an inventory of potential septa topologies will be considered and their relative merits will be discussed. Finally an initial cross section of two septa will be proposed and their robustness described to allow a feasibility study of the extraction protection elements, which are needed to protect the septa in case of an asynchronous beam dump.

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