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Production of the 1.5 GHz fundamental power couplers for VSR demo

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Research Instruments (RI) and Thales have been producing the first two prototype 1.5 GHz fundamental power couplers for the VSR (Variable pulse length Storage Ring) DEMO since early 2021 and delivered these prototypes in late March 2023. These couplers are designed to provide up to 16 kW power to two 1.5 GHz superconducting cavities of the VSR DEMO module and provide variable coupling with a Qext range from 6×10^6 to 6×10^7 . The paper describes the challenges in fabricating a scaled coupler and provides details on the modifications to the design as a result of these challenges. The impact of the late-stage design modification is discussed along with how this affects future conditioning plans.

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Footnotes

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