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Overview and status of ESS RF systems

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The proton linac, for the European Spallation Source (ESS) currently in construction, will be powered by 155 high power RF systems. The RF systems will ultimately deliver in excess of 130 MW peak power, 5 MW of average power to a mixture of normal and superconducting accelerating structures at 352.21 and 704.42 MHz. ESS is a long pulse machine and will operate at 14 Hz with beam pulses of 2.86 ms. This paper will introduce the scope, system design and key technologies of the RF systems being deployed along the linac. We will present the installation and test status as well as initial experience from the operation of the first RF systems used for conditioning and first commissioning runs with beam. The RF systems have been designed to be as energy efficient as practical and we will present the results of a selection of the efficiency measures undertaken at ESS.

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Footnotes

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