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RF Development Status at Iranian Light Source Facility

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The Iranian Light Source Facility (ILSF) RF system was conceptually designed in accordance with the requirements for ILSF 3GeV storage ring with 400 mA beam current at 500 MHz RF frequency. The development of the solid state amplifiers initiated with the design and fabrication of two amplifier modules based on BLF578 and MRFE6VP1K25HR6 transistors and 670W and 540W stable RF power were delivered respectively. Combining of 8 such modules is under test to achieve 4kW output power as the first stage of the conceptually designed combining network. The measured characteristics are presented in this poster. Motivated by the development of HOM damped cavity with simpler structure at 100MHz at MAX Lab., 100MHz RF system is under exploration as an alternative to 500 MHz at ILSF. In addition to thorough study of the frequency change effects on the beam and machine parameters, the design of a 100MHz cavity based on MAX Lab. design has also been performed. Fabrication of a prototype cavity is planned in order to conclude the possibility of the cavity development in house.

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