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ESS-BILBAO CONTRIBUTION TO THE ESS WARM LINAC HIGH POWER RF SYSTEMS

Thursday 23 June 2016 10:00 (30 minutes)

ESS Bilbao, an international center for neutron science and technologies in Spain, is in charge of Spanish in-kind contribution to the European Spallation Source (ESS) project. That includes all high power RF sources for the normal-conducting section of ESS LINAC consists of three 30kW solid-state amplifiers for buncher cavities in the MEBT section and six 3MW 352MHz klystron amplifiers for RFQ and DTLs including modulators, LLRF, interlocks and RF distribution system. These RF sources will operate in pulse regime with 3.5ms pulse-width and 5% duty cycle.

In line with this project, a 2kW solid-state amplifier module based on novel compact balanced architecture has been developed and tested in-house as an R&D activity and also characterization and tendering of 30kW solid-state RF transmitters with high reliability to feed the buncher cavities and high average power klystrons are in process.

This paper will address status of the project including conceptual design, test results, ongoing activities and challenges.

Summary

Primary author: KAFTOOSIAN, Arash (ESS Bilbao)

Presenter: KAFTOOSIAN, Arash (ESS Bilbao)

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