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DLLRF for the active harmonic RF system of ALBA-II

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ALBA is facing the upgrade towards a low emittance synchrotron light source machine. An active harmonic RF system operating at 1.5 GHz is foreseen to increase the longitudinal bunch length and therefore the Touschek lifetime. The main purpose of the DLLRF is to control the cavity voltage and resonating frequency of the cavity by means of the drive towards the amplifier and the plunger inside the cavity respectively. A prototype has been designed and built based on the SIS8300KU, SIS8864 and DWC8VM1 commercial boards provided by Struck. The prototype consist of a full self-contained rack, including not only the uTCA crate with the mezzanine boards, but also other auxiliaries to be able to operate the harmonic system such as intermediate frequencies generation or the driver motor controllers. In the framework of the collaboration between ALBA, HZB and DESY, the performance of the system is being proved in the BESSY-II ring using a 15 kW SSPA to feed the active Harmonic EU cavity designed by ALBA.

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Footnotes

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Yes

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