

# Diamond Digital Low Level RF

*Wednesday, October 25, 2023 3:34 PM (4 minutes)*

The first version of digital low level RF (DLLRF) for the Diamond Light Source storage ring and booster was developed with ALBA Synchrotron. Six systems have been built so far. Two of them are in routine operation controlling two normal conducting HOM-damped cavities in the Diamond storage ring. A third system is being used for cavity testing in the RF test facility. The fourth system has been deployed to control the second normal conducting booster cavity. The fifth DLLRF system has been deployed for the third normal conducting RF cavity in storage ring.

A new DLLRF system based on SIS8300-KU with RTM has been developed and tested in the last few years. The linac version with arbitrary waveform generator mode was tested successfully to generate flat top pulse from SLED at high power in the linac. The high-power pulse accelerated electron beam to 68 MeV in just one accelerating structure. DLLRF for passive harmonic cavity is being designed.

## Keyword

**Primary author:** GU, Pengda (Diamond Light Source)

**Session Classification:** Posters

**Track Classification:** System and operation