



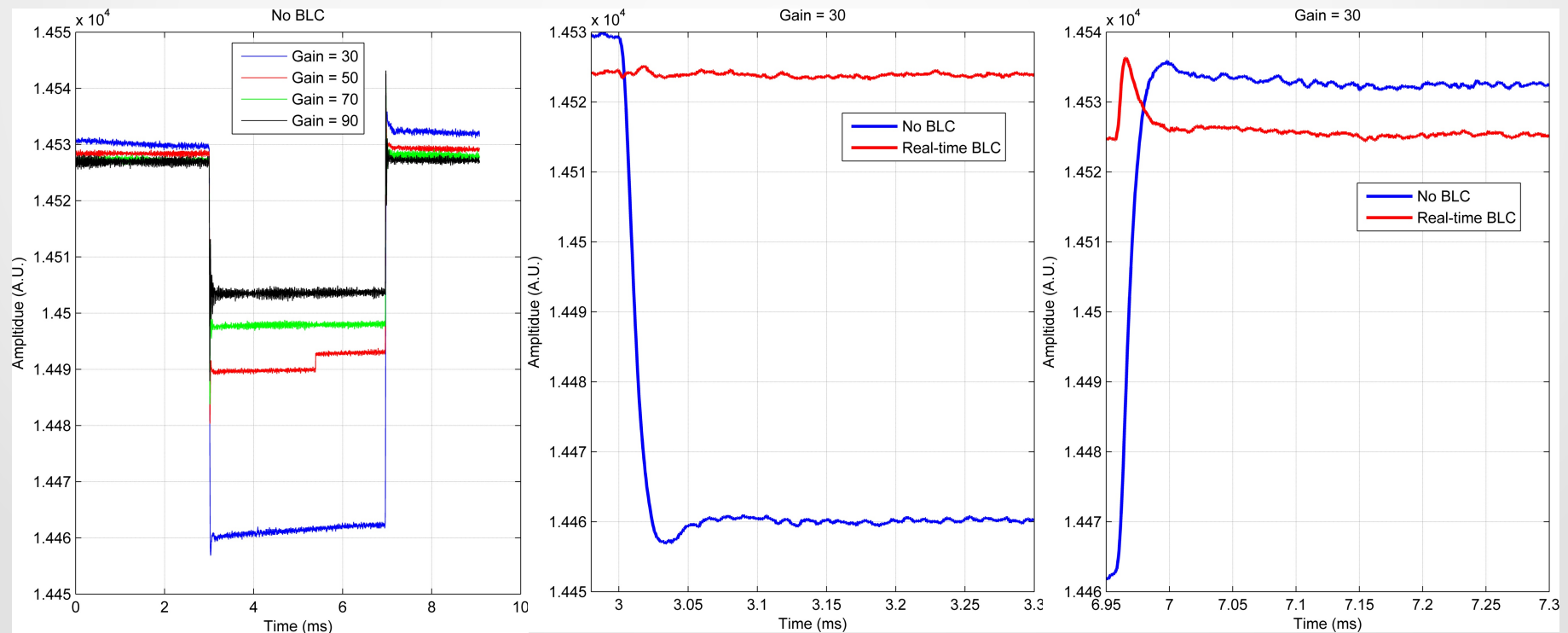
Latest developments of MTCA.4-based LLRF for ELBE

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Real-time BLC

An electron beam passing through the cavity induces a voltage proportional to the charge and the cavity shunt impedance. The feedback loop compensates the perturbation only after the accelerating gradient drops. The loop delay and high gain result in an overshoot or even oscillations during transients. A feed forward signal can be applied to act on the plant simultaneously.



Field detection

In a passive Schottky diode based double balanced mixer the flicker ($1/f$) noise is a near-dc phenomenon. Modern field detection modules use active mixer consisting usually of an LO buffer amplifier driving a double balanced mixer.

The influence of the LO power level on the output signal's integrated phase noise has been investigated.

