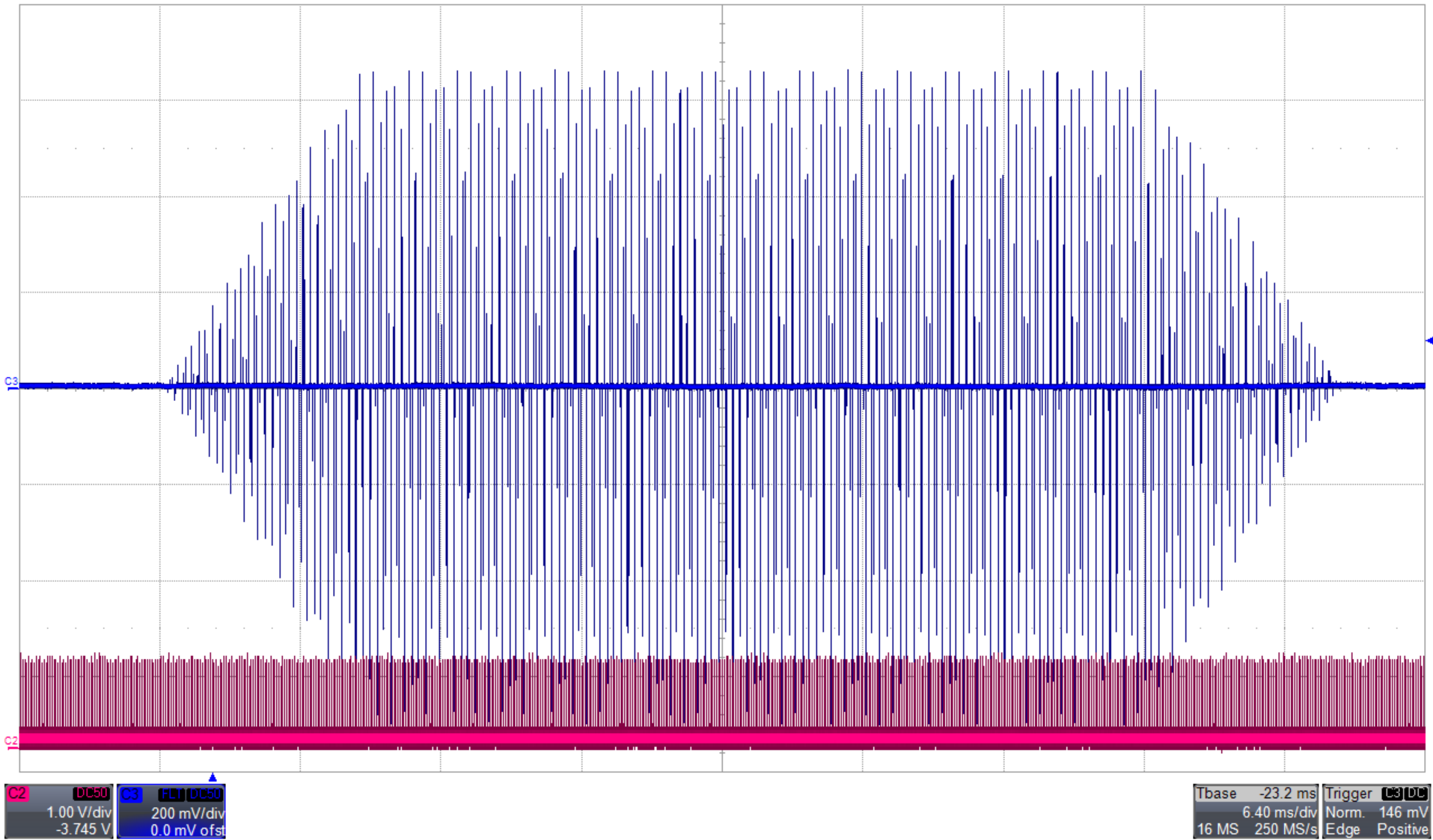


# ADT firmware update after MD1

- New features are implemented into the ADT signal processing modules
  - New excitation mode implemented – “ADT AC dipole”
  - Limitation on excitation length within a turn can be removed in an expert mode (cleaning/blow-up/tune kick) – protected by machine critical settings
  - Further decoupling of the cleaning and excitation signal chains
  - Preparation for the new gigabit link standards (new BeamPos modules)
  - Many other small improvements (e.g. triggering, preparation for instability detection etc.)
  
- The firmware in the machine has to be updated
  
  
- A proper validation of the full transverse feedback system is necessary

# ADT as AC dipole (or tune kicker)



# What needs to be validated?

- The firmware had been recompiled – a full validation of the transverse feedback loop needs to be performed
  - Open loop transfer function measurement (mainly to validate the 1-turn delay)
  - A short train (12 b.) at injection, takes about 1 hour
- Test and validation of the unrestricted excitation modes, including the controls via LSA, machine critical settings, RBAC roles, 1-2 hours
- The ALLAbortGapClean class underwent a major modification, a full validation of the functionality at injection and during the intensity ramp-up, in a shadow of intensity ramp up