Gregory Kapraun 9/7/97

LVD Differential SKEW Testing

Test Environment
This data is on a pretty poor (spec violation) cabling environment.

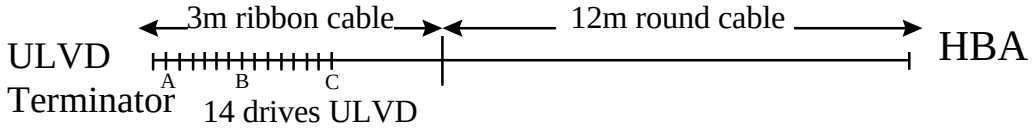
14 Drives connected at 0.2m centers on 3m of unshielded ribbon cable (3M 30AWG)

12m of shielded round cable (Montrose/CDT CBL 1064-34 Twisted pair) connected from Host adapter to one end of ribbon cable

Termination at opposite end of HBA on ribbon cable

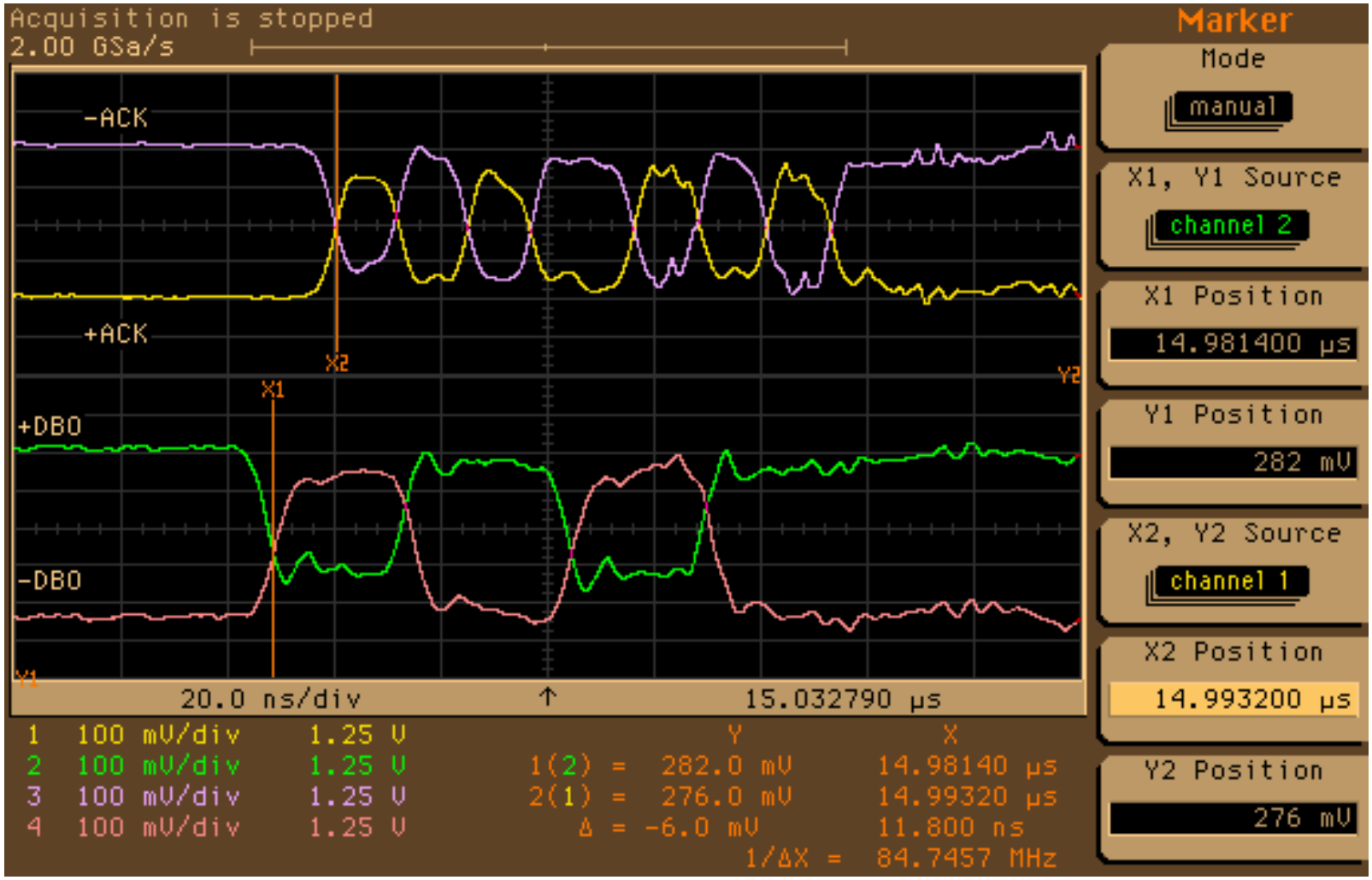
Scope used: HP5472D, with 2 Gs/sec resolution.
Probes used, HP 54701A 100K Ohm, 0.6pF 2.5GHz 200V

Test points included connector nearest terminator (A), connector in middle of 14 drives(B), and connector closest to HBA(C)

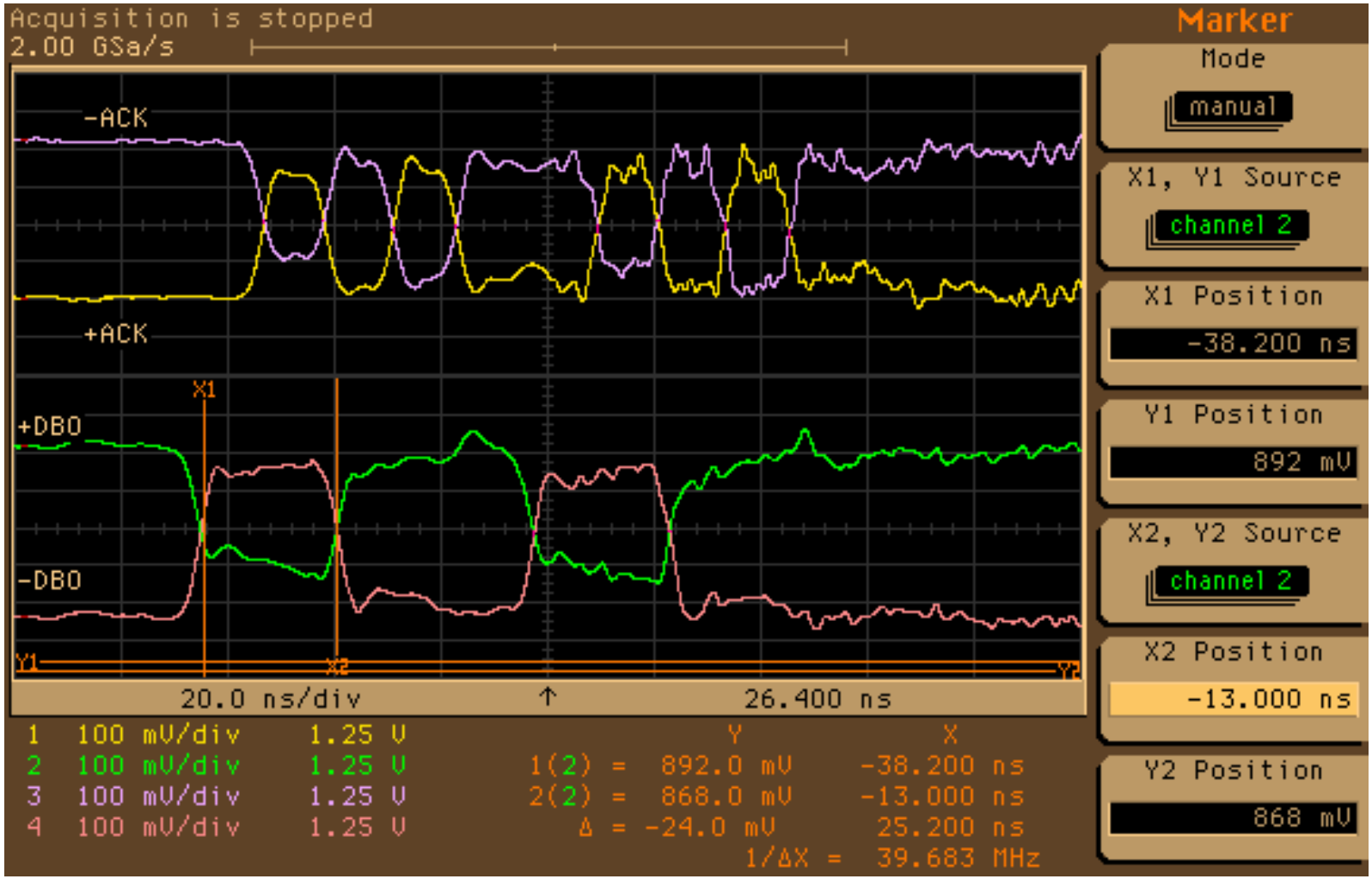


Experiment attempted to place .5pF, 3pF, and 10pF on one side of differential pair and then examine effects at A B and C for Reads, Writes, setup, hold, and transitions.

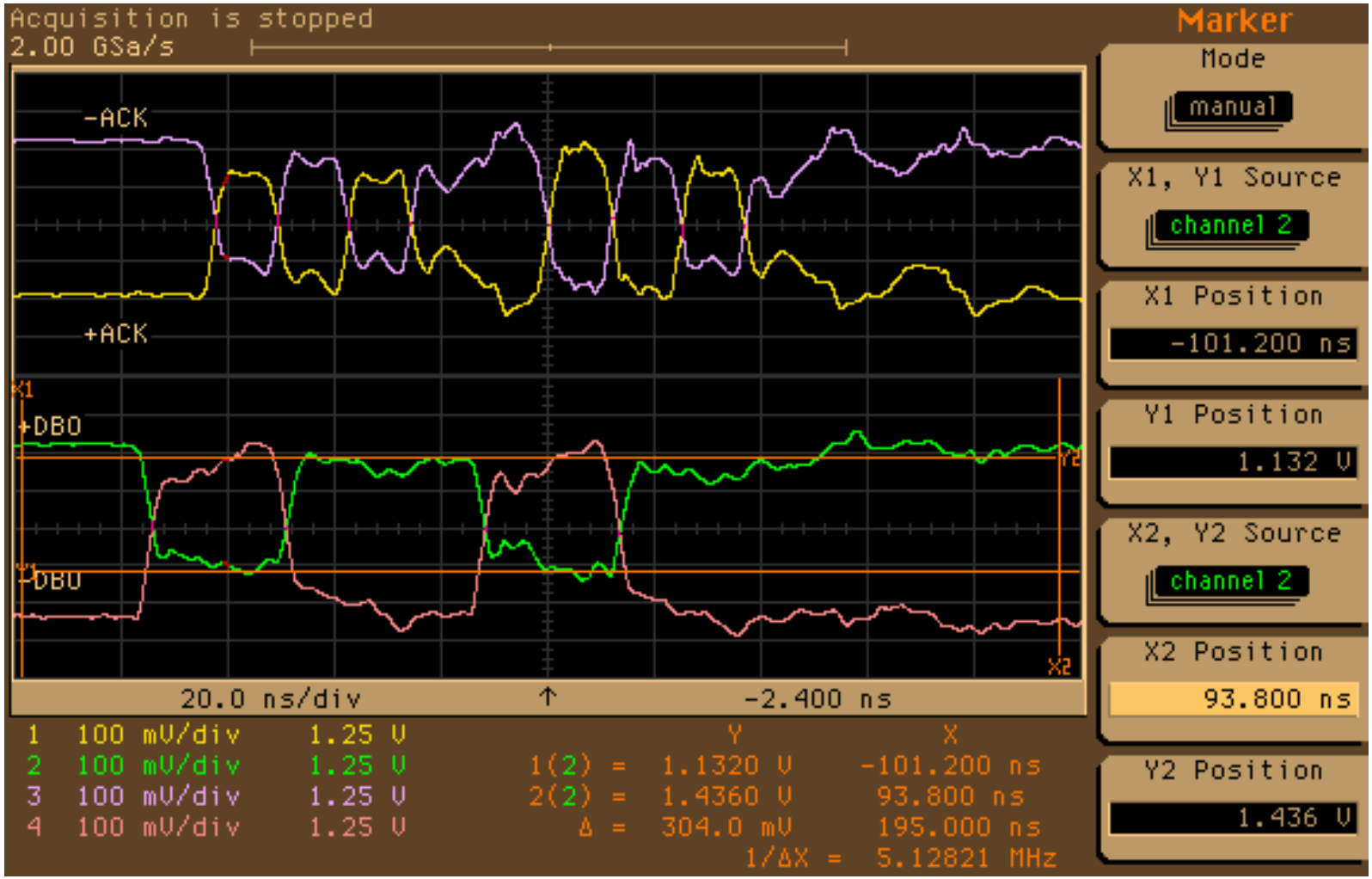
Pattern during reads and writes is alternating AAAA and 5555 pattern.



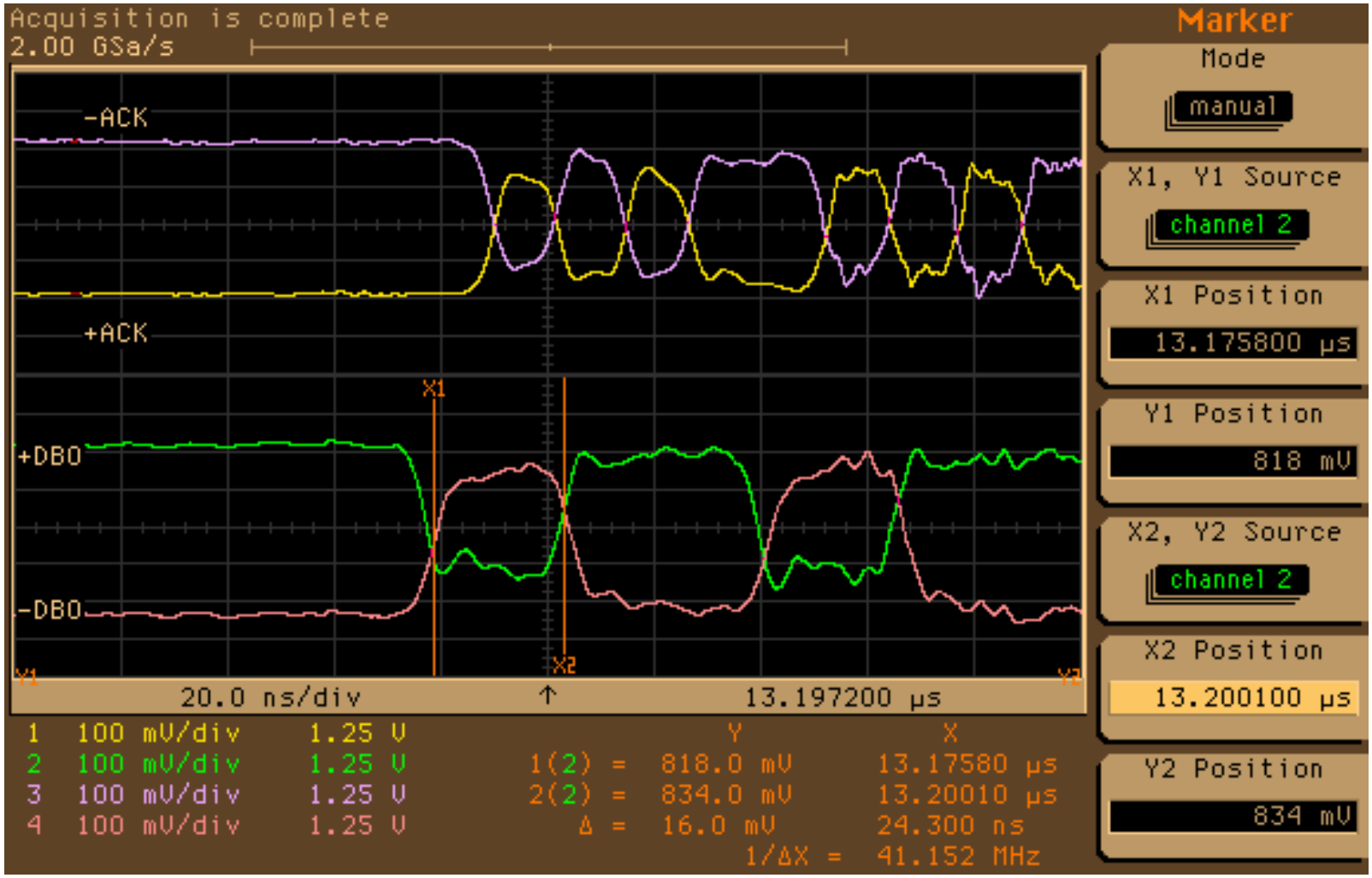
Reference graph, No cap added, Write, data taken at the drive, position A



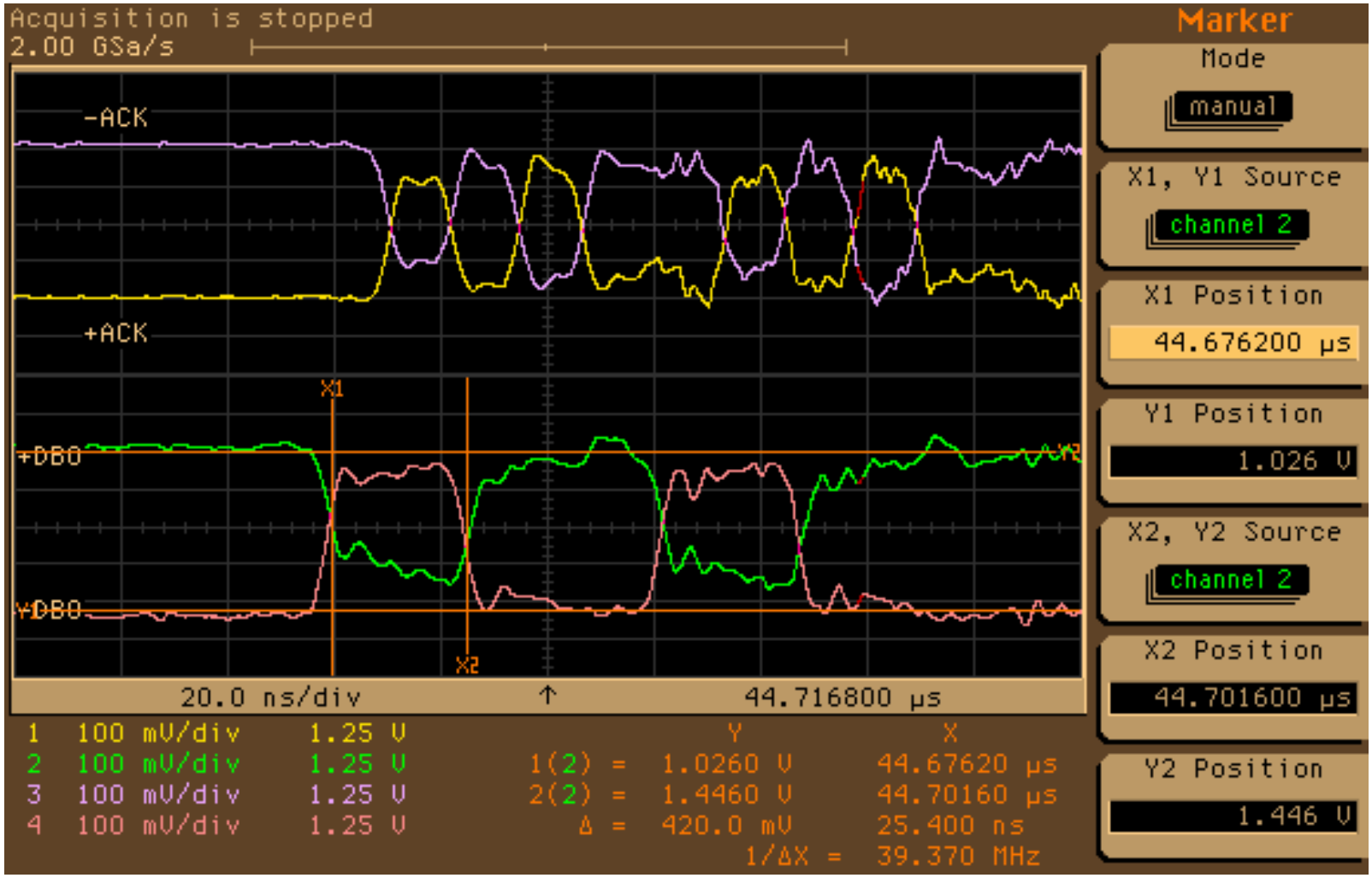
Reference graph, No cap added, Write, data taken at the drive, position B



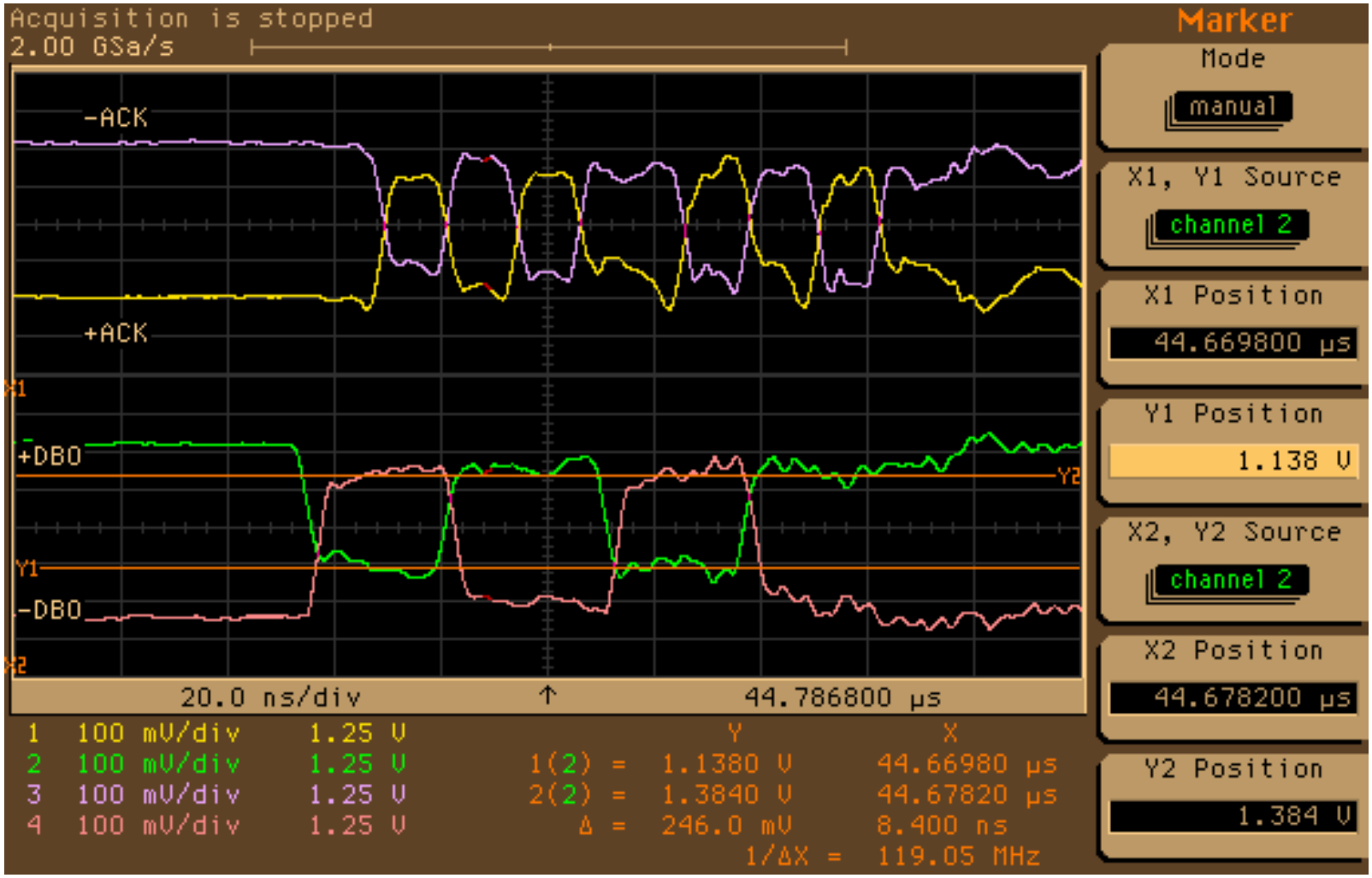
Reference graph, No cap added, Write, data taken at the drive, position C



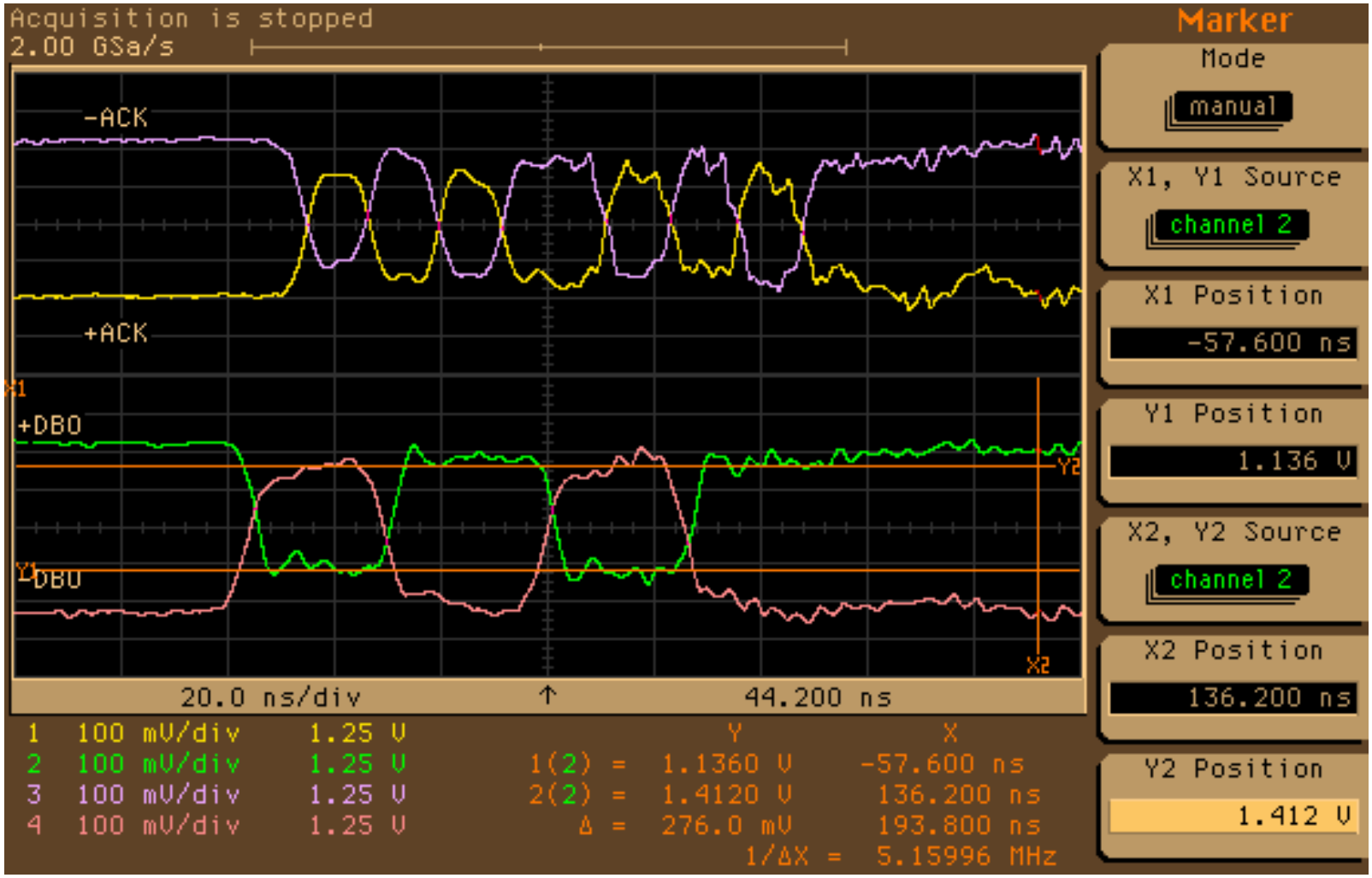
0.5pF graph, Write, data taken at the drive, position A



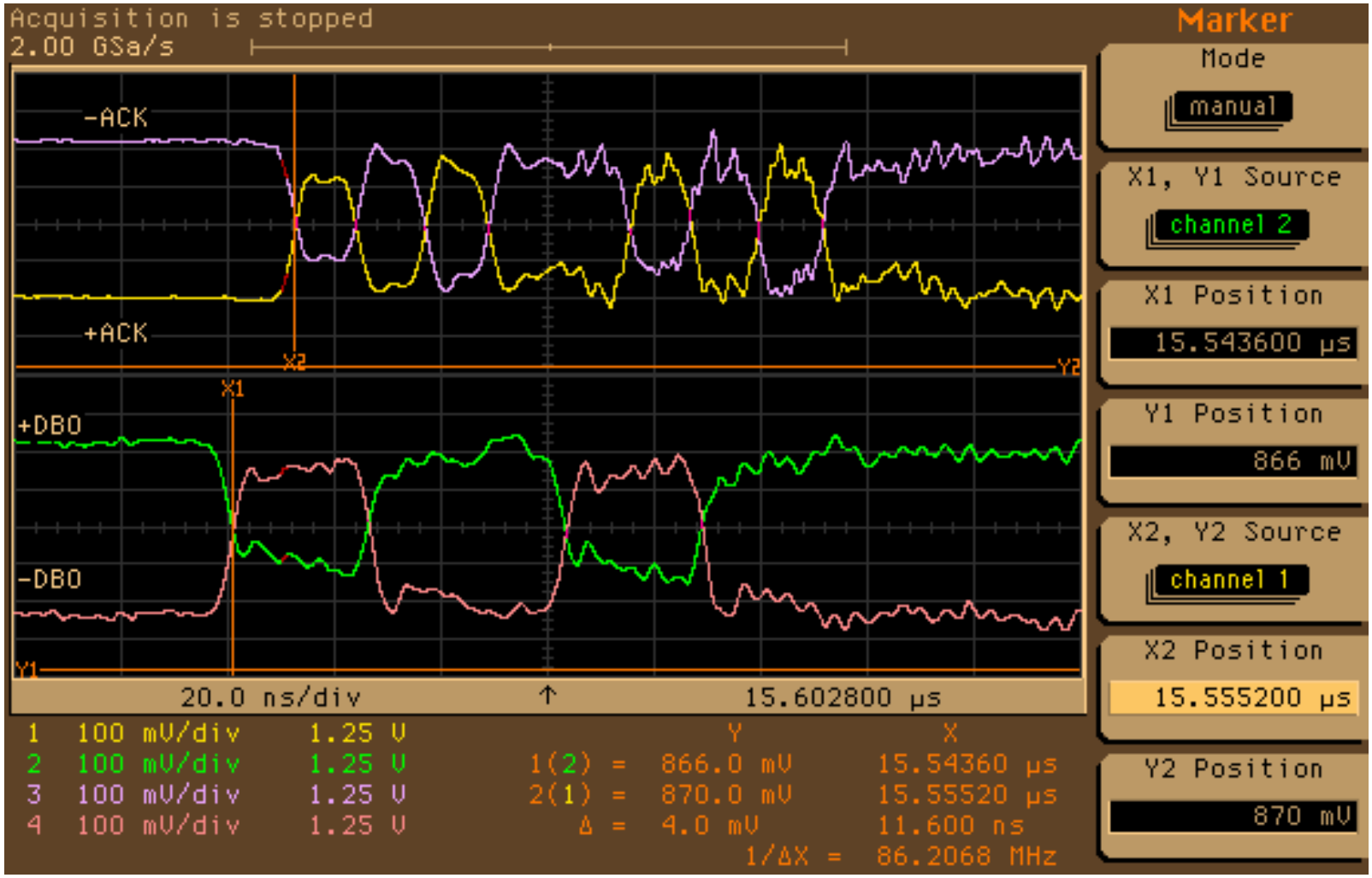
0.5pF graph, Write, data taken at the drive, position B



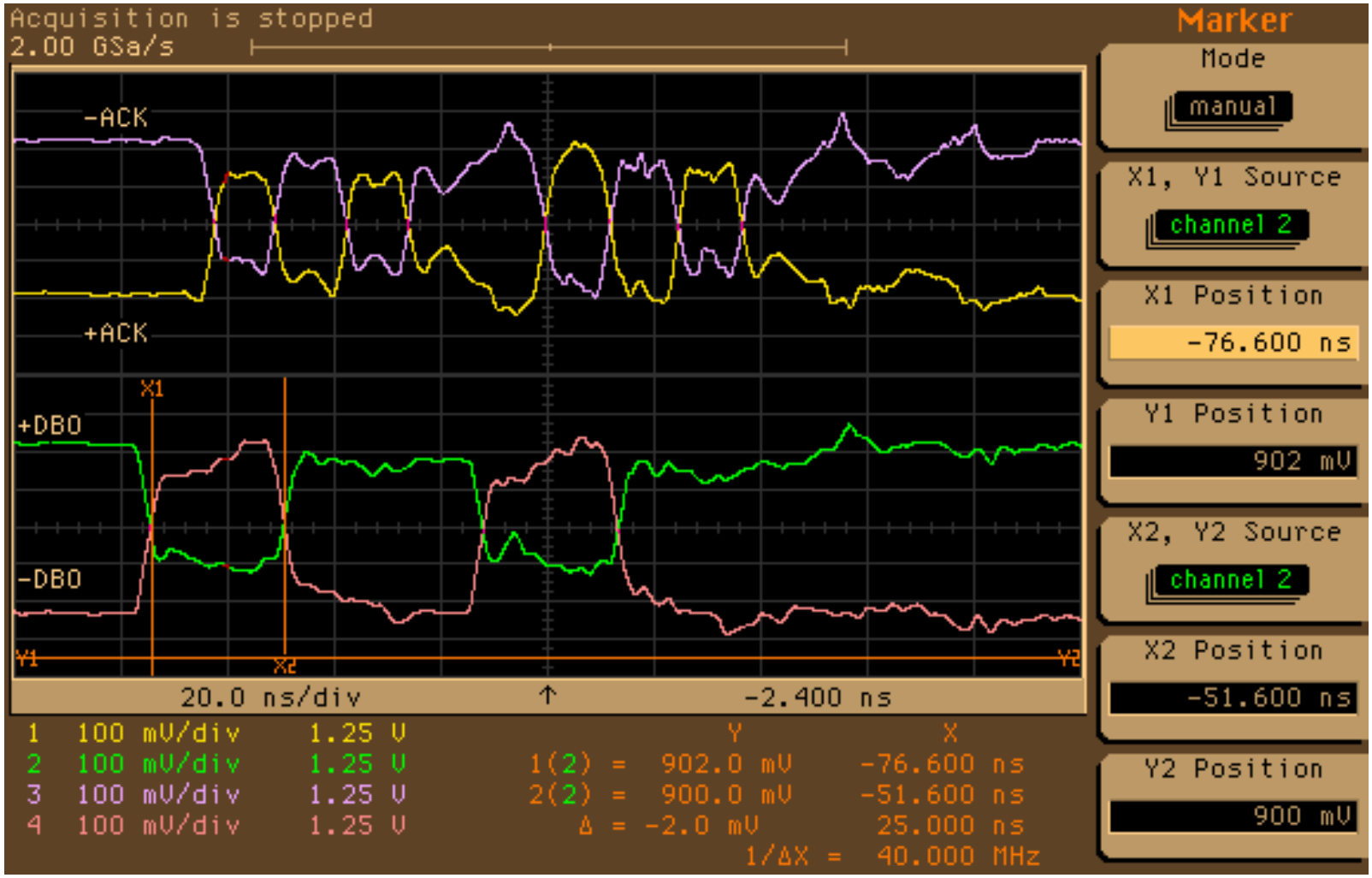
0.5pF graph, Write, data taken at the drive, position C



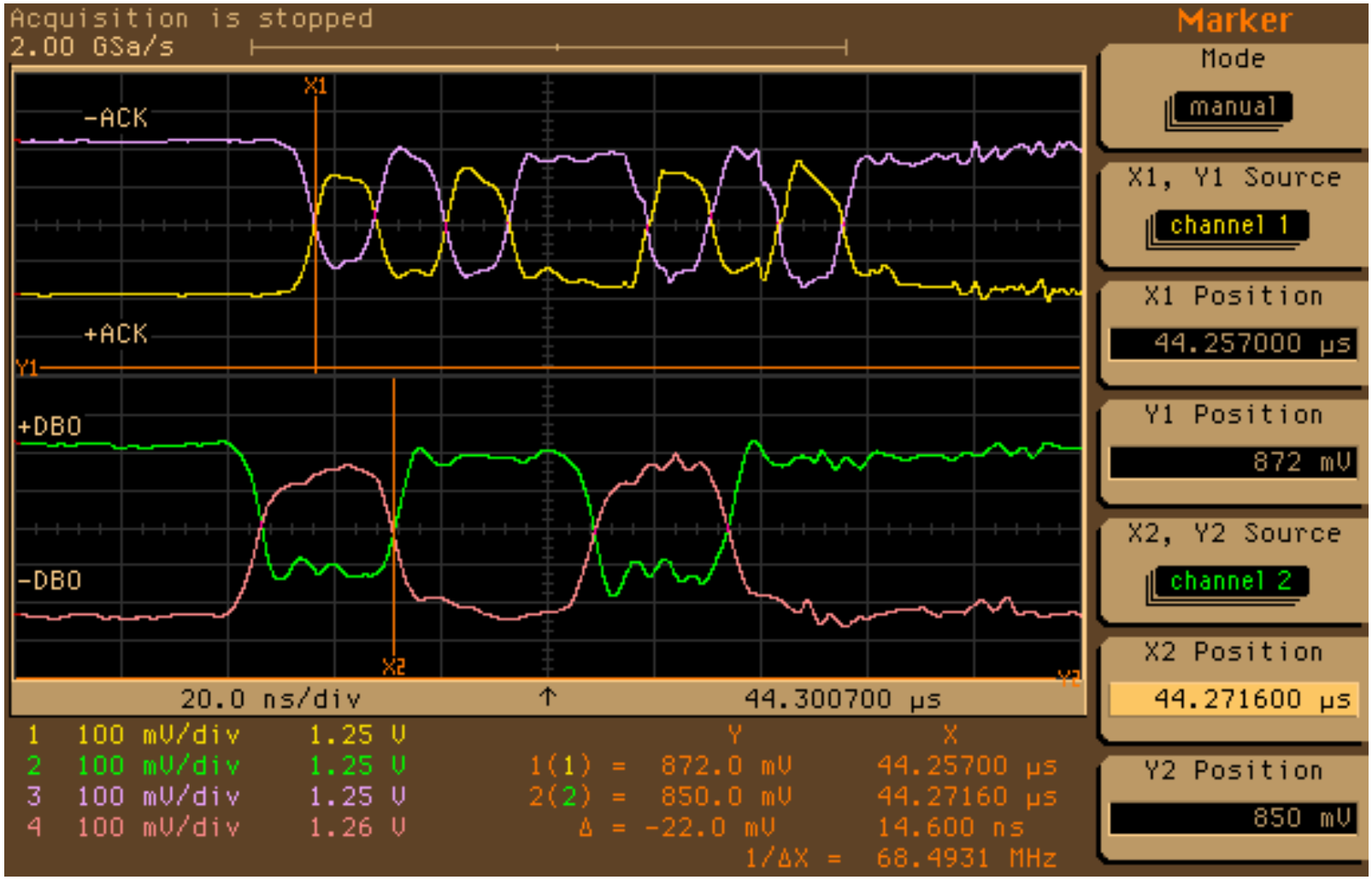
3pF graph, Write, data taken at the drive, position A



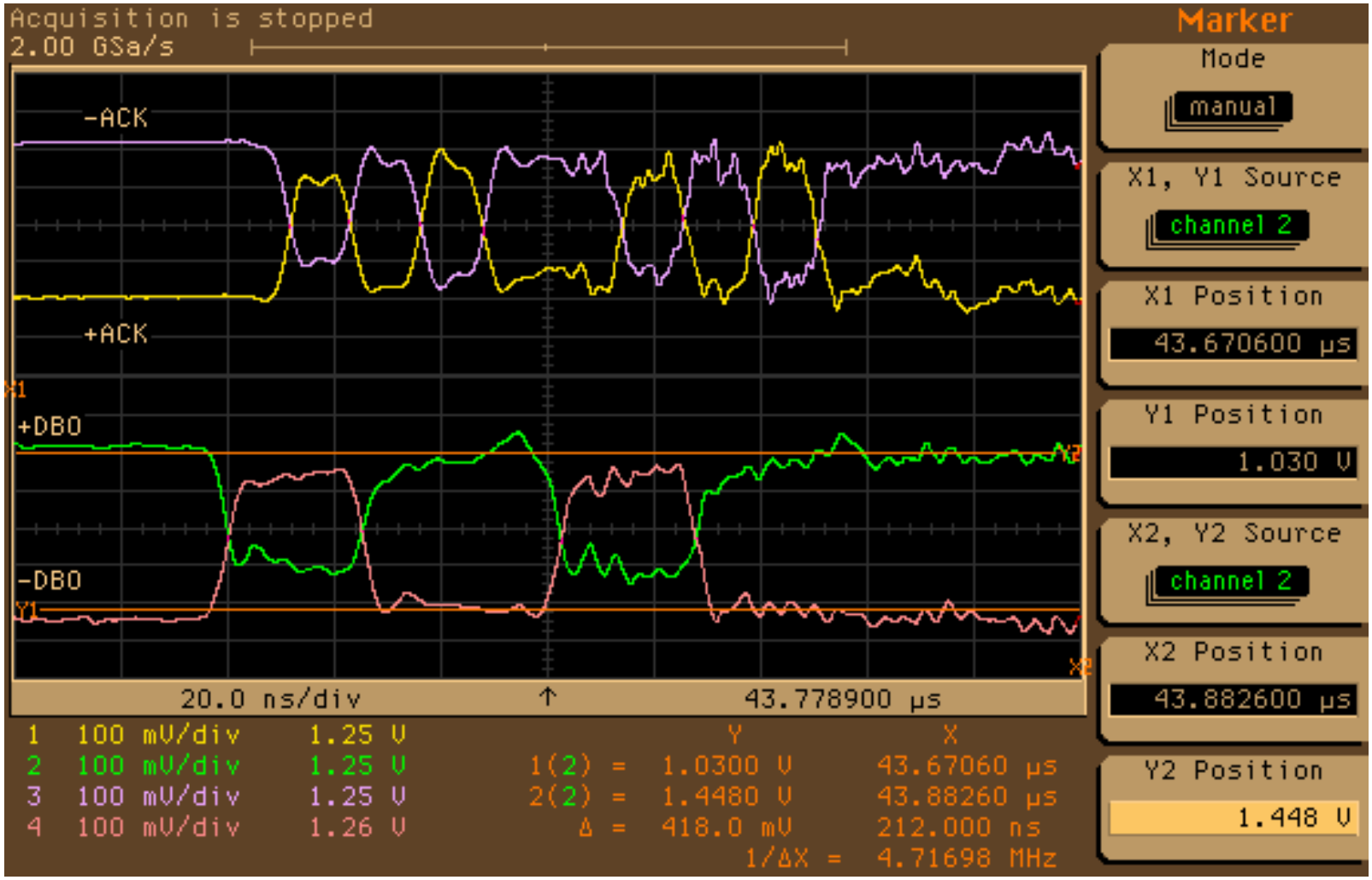
3pF graph, Write, data taken at the drive, position B



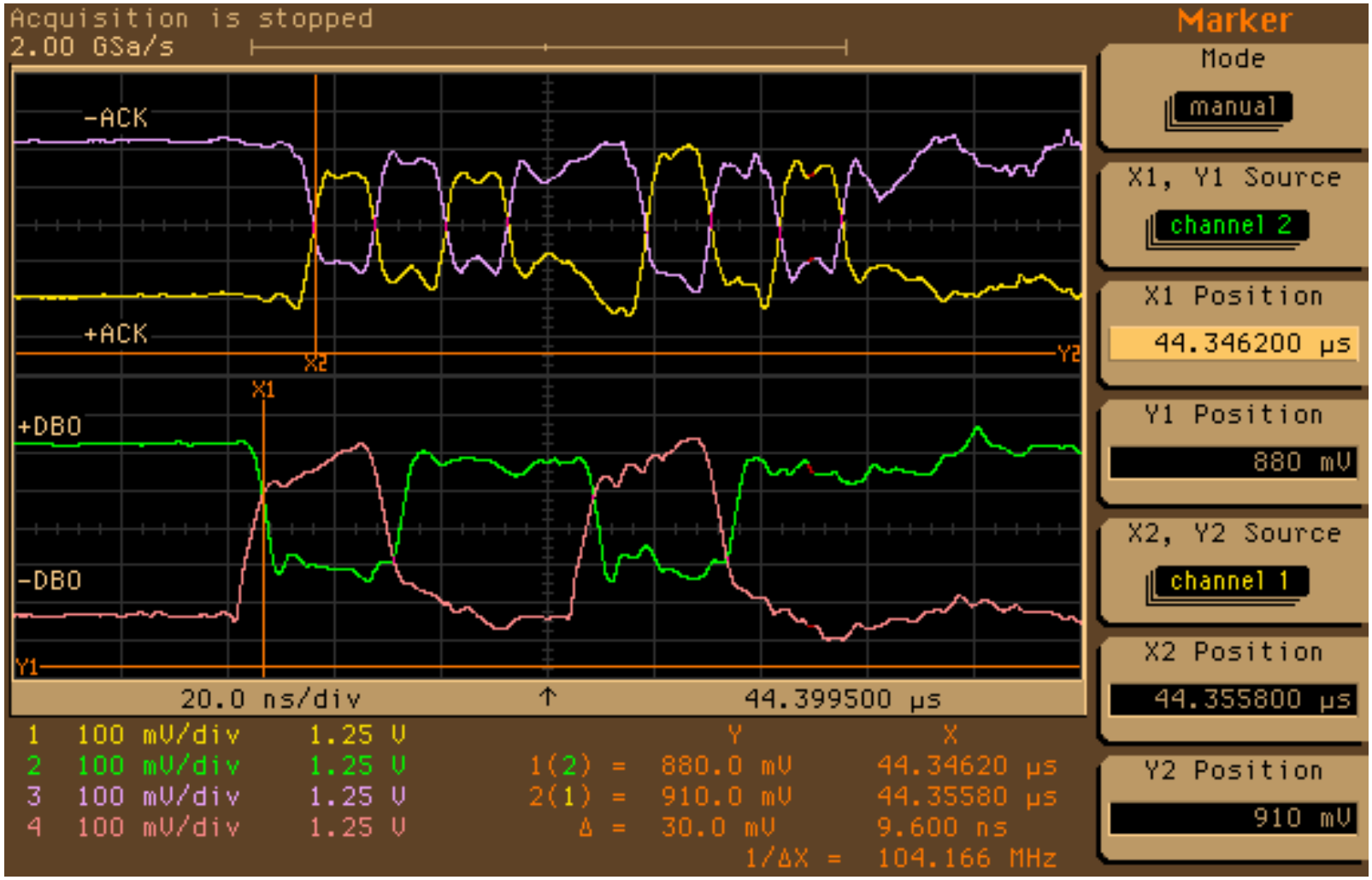
3pF graph, Write, data taken at the drive, position C



10pF graph, Write, data taken at the drive, position A

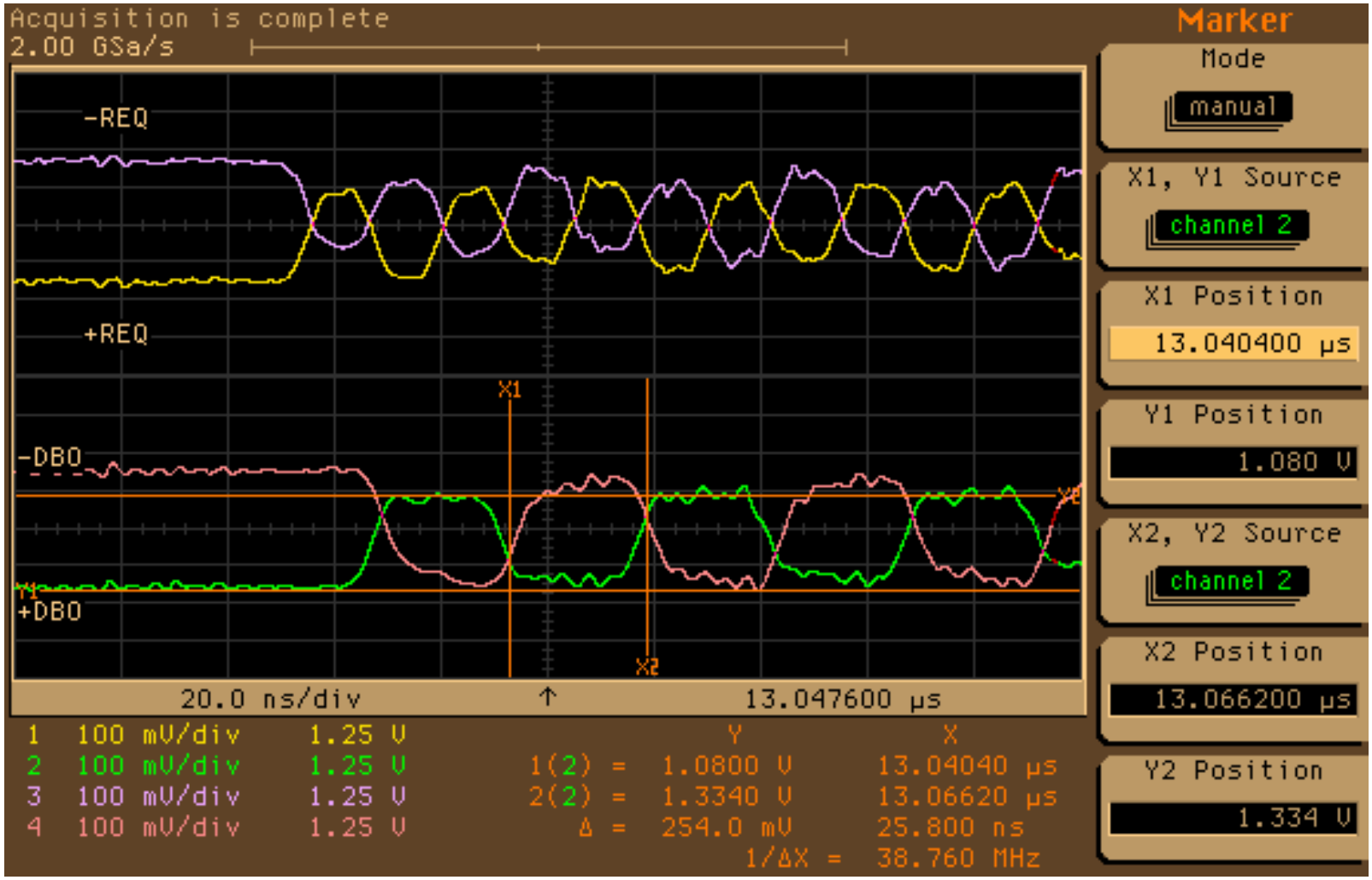


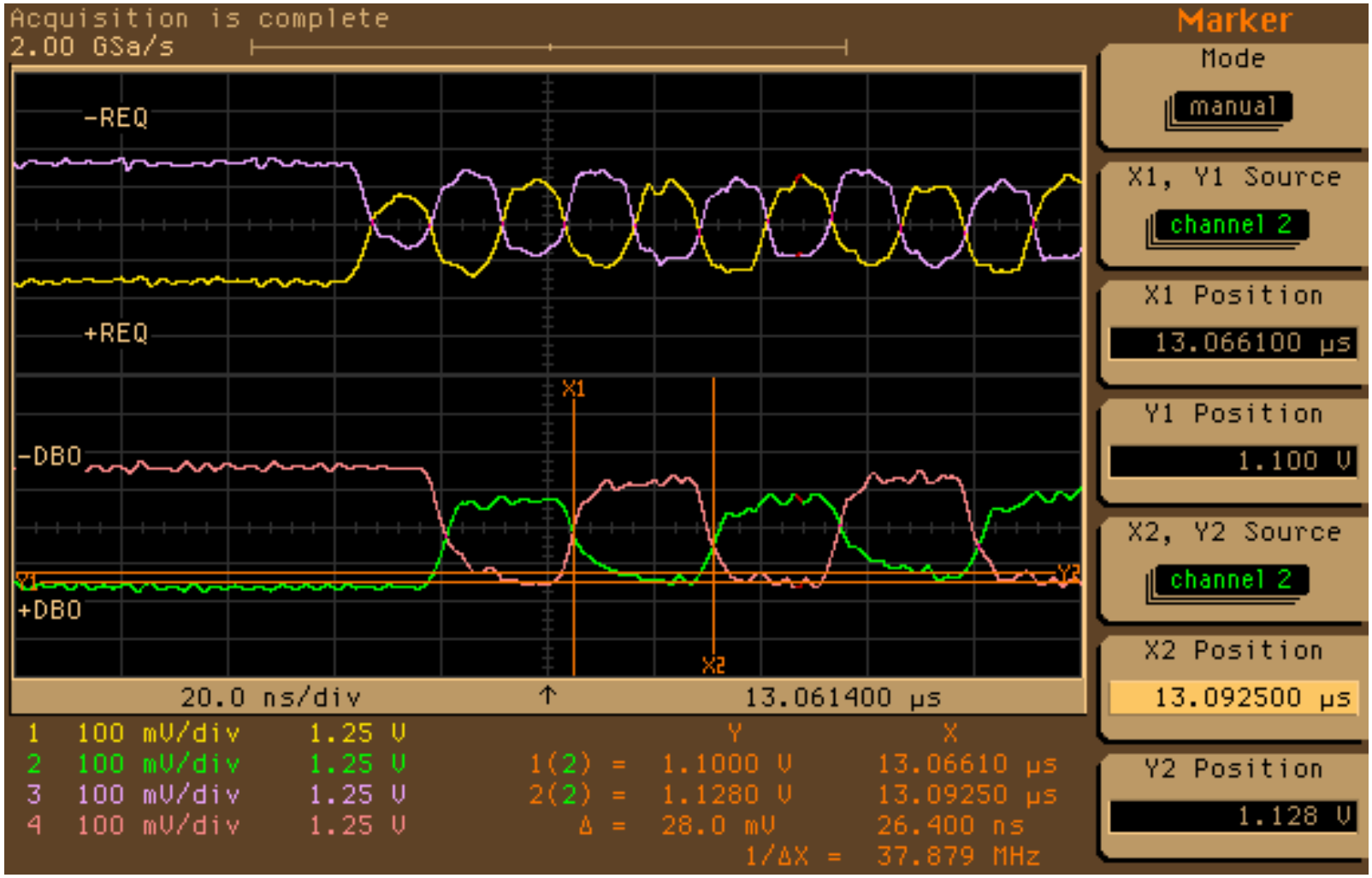
10pF graph, Write, data taken at the drive, position B



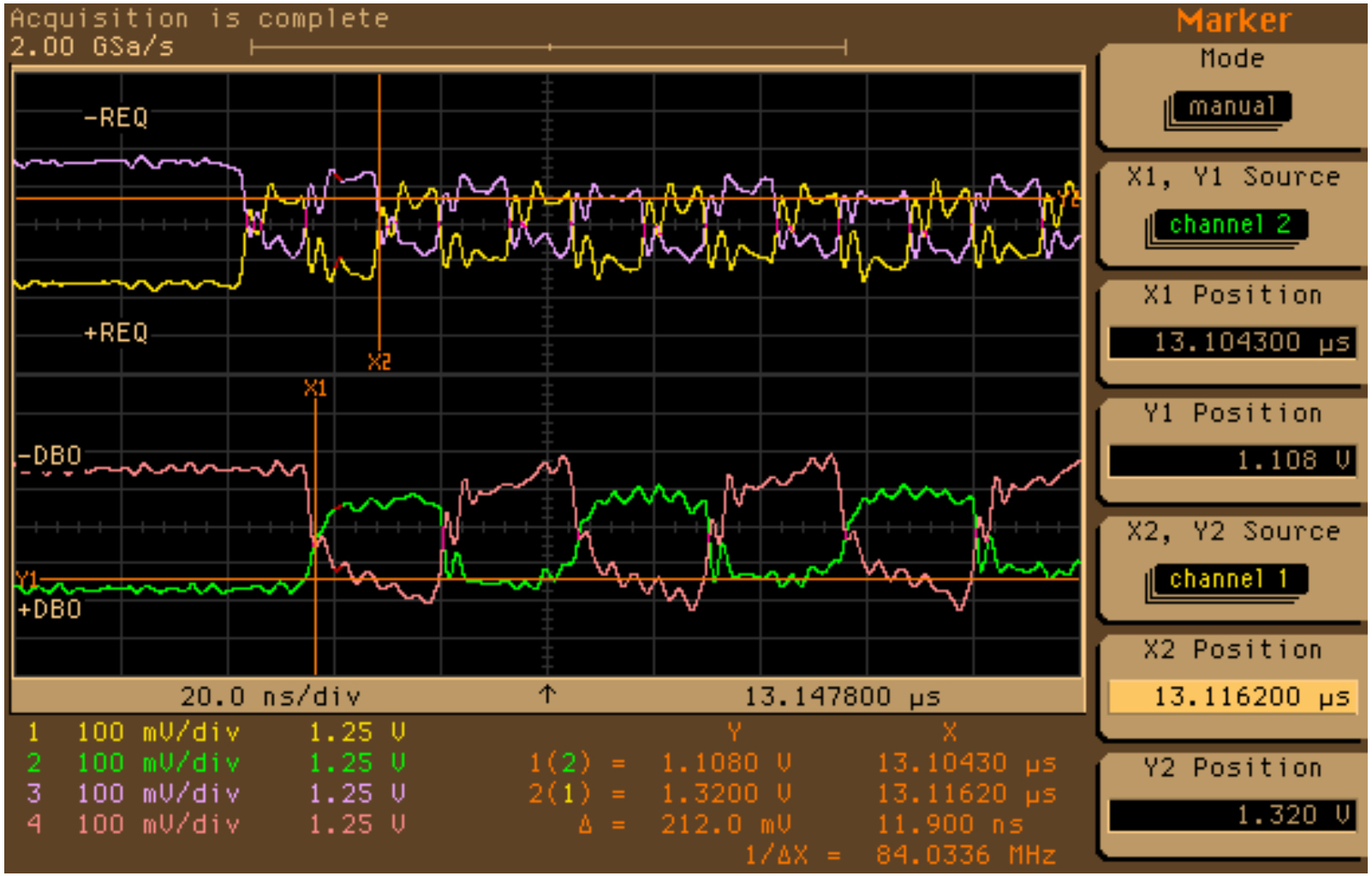
10pF graph, Write, data taken at the drive, position C

Western Digital

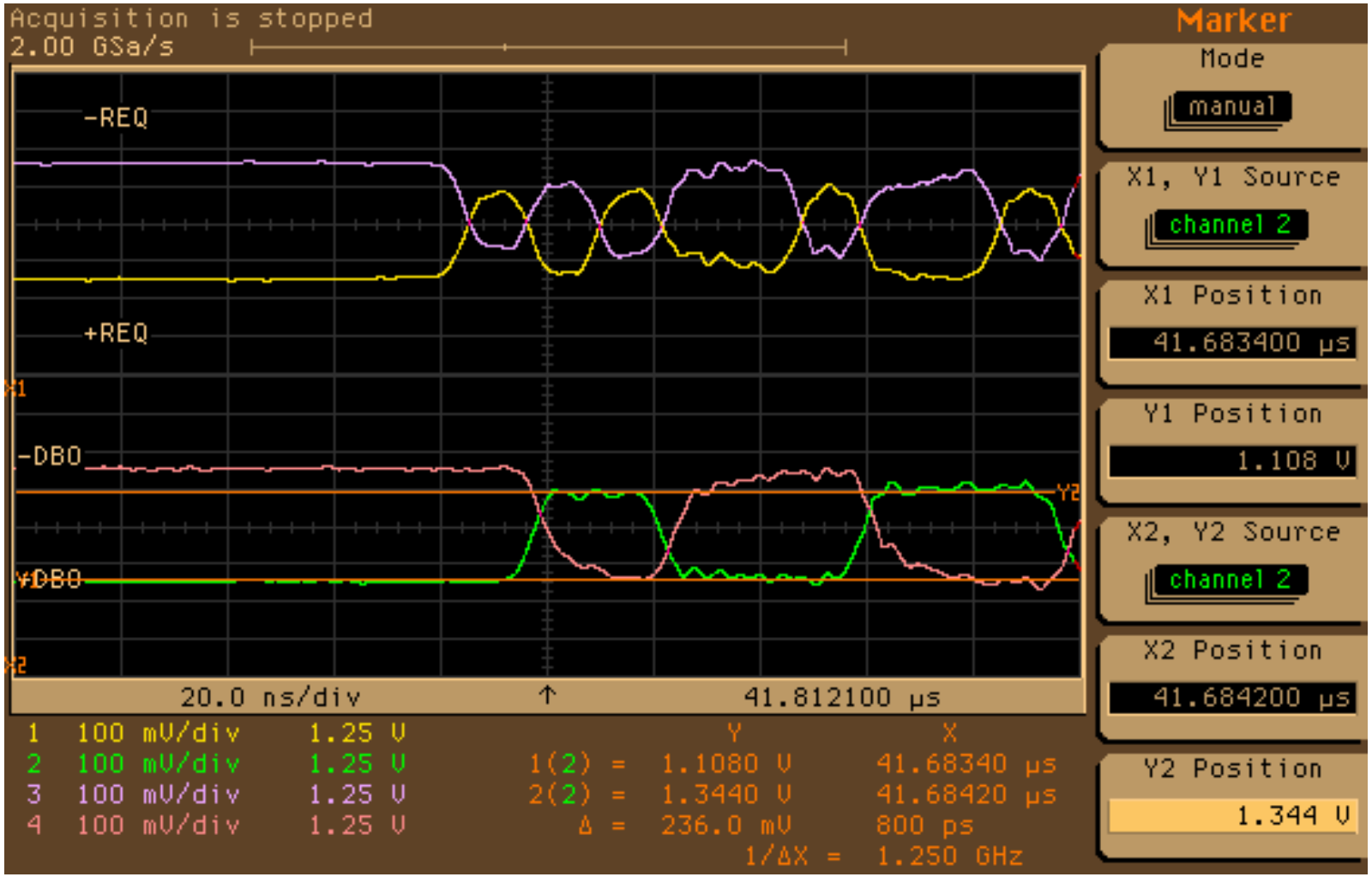




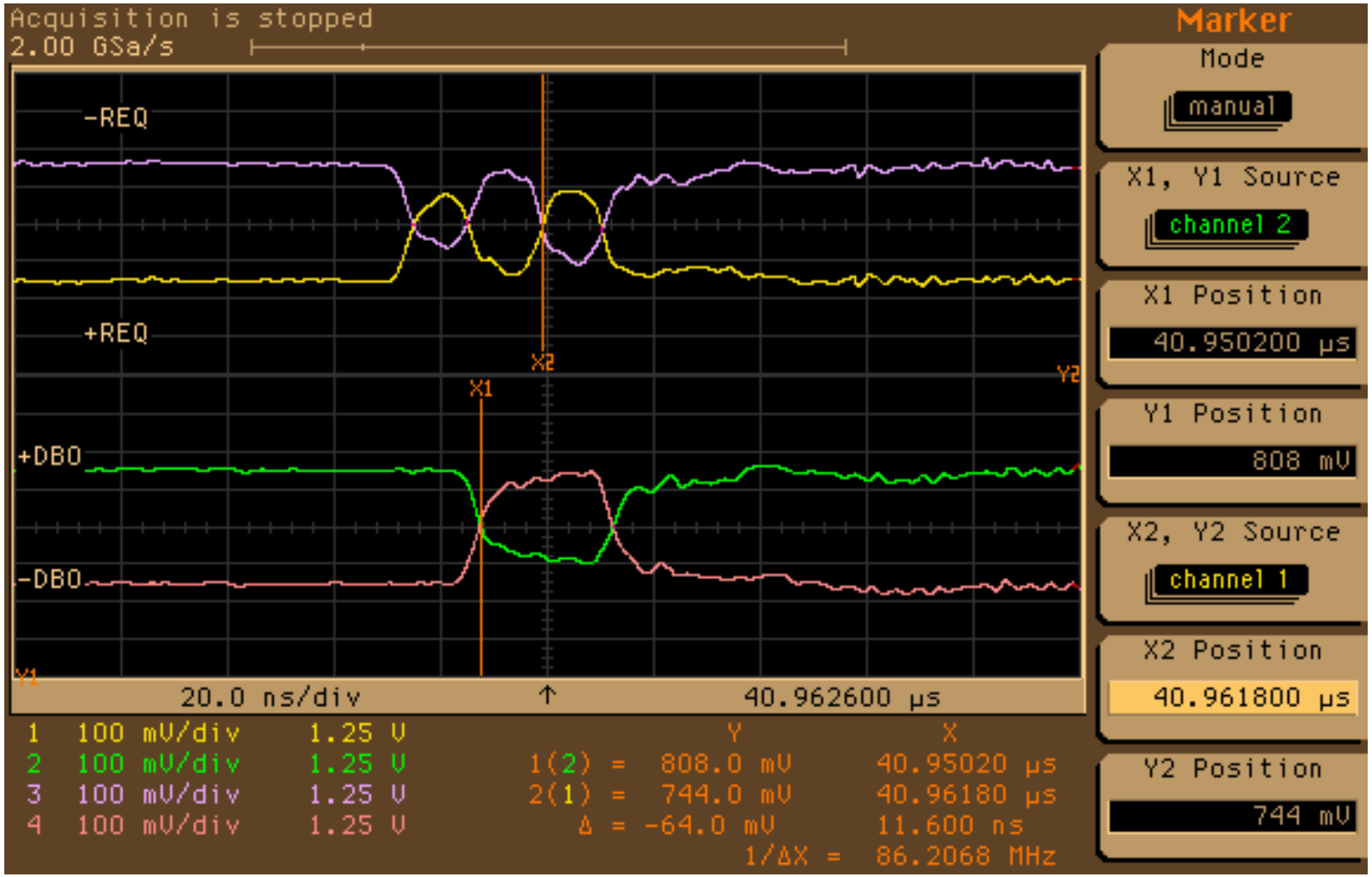
Reference No Cap graph, Read, data taken at the HBA, drive at position B



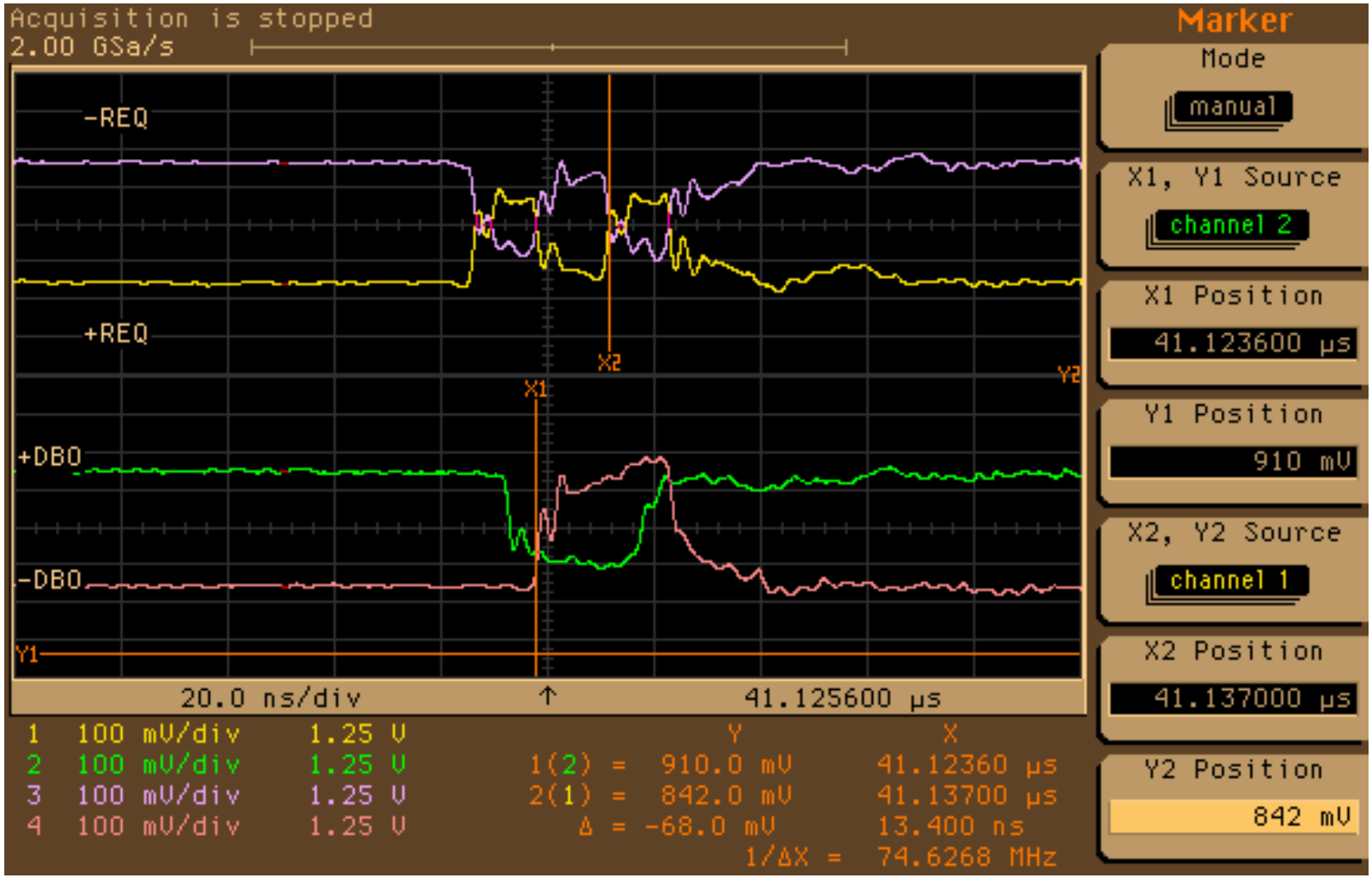
Reference No Cap graph, Read, data taken at the HBA, drive at position C



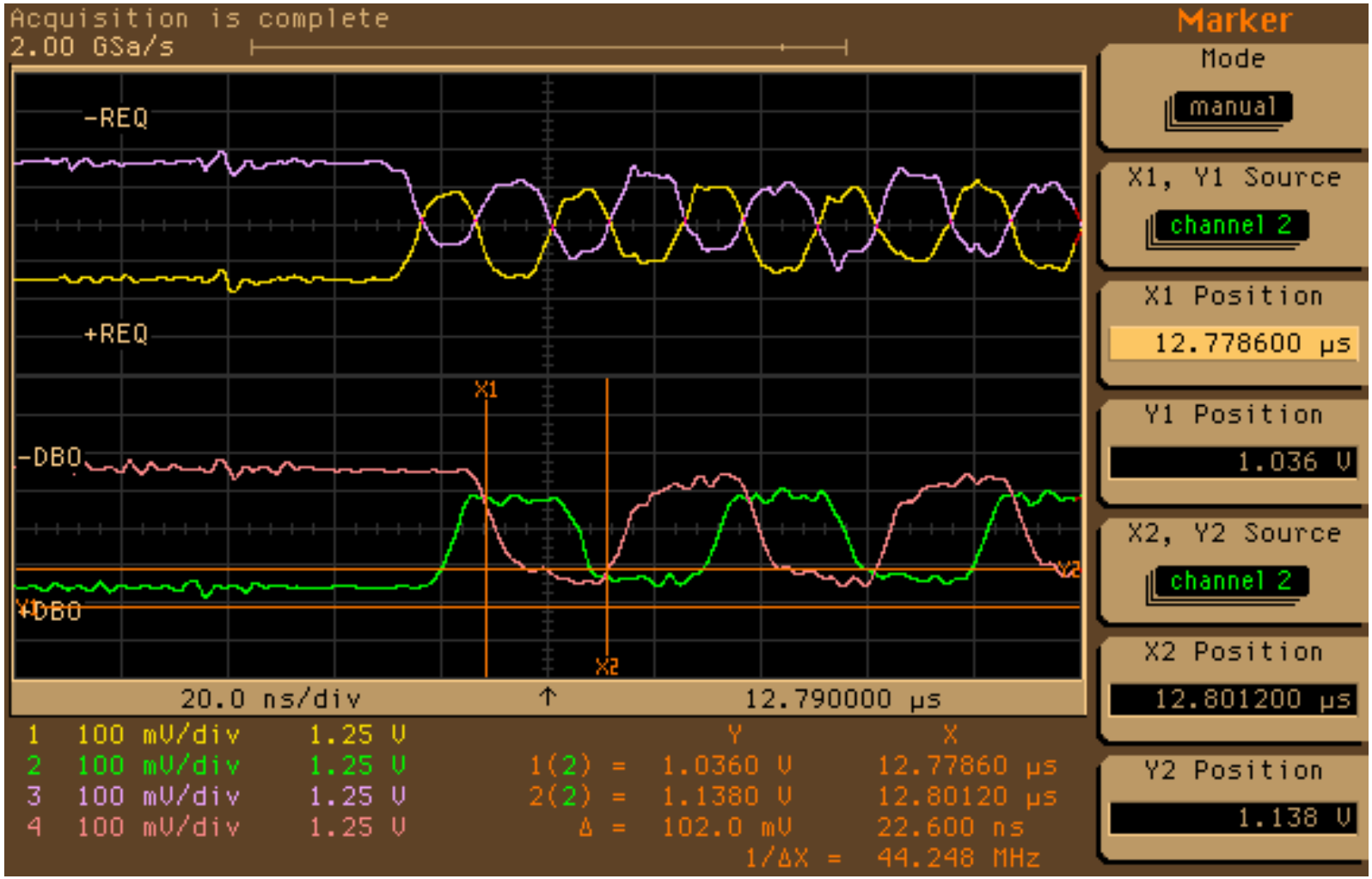
3pF graph, Read, data taken at the HBA, drive at position A



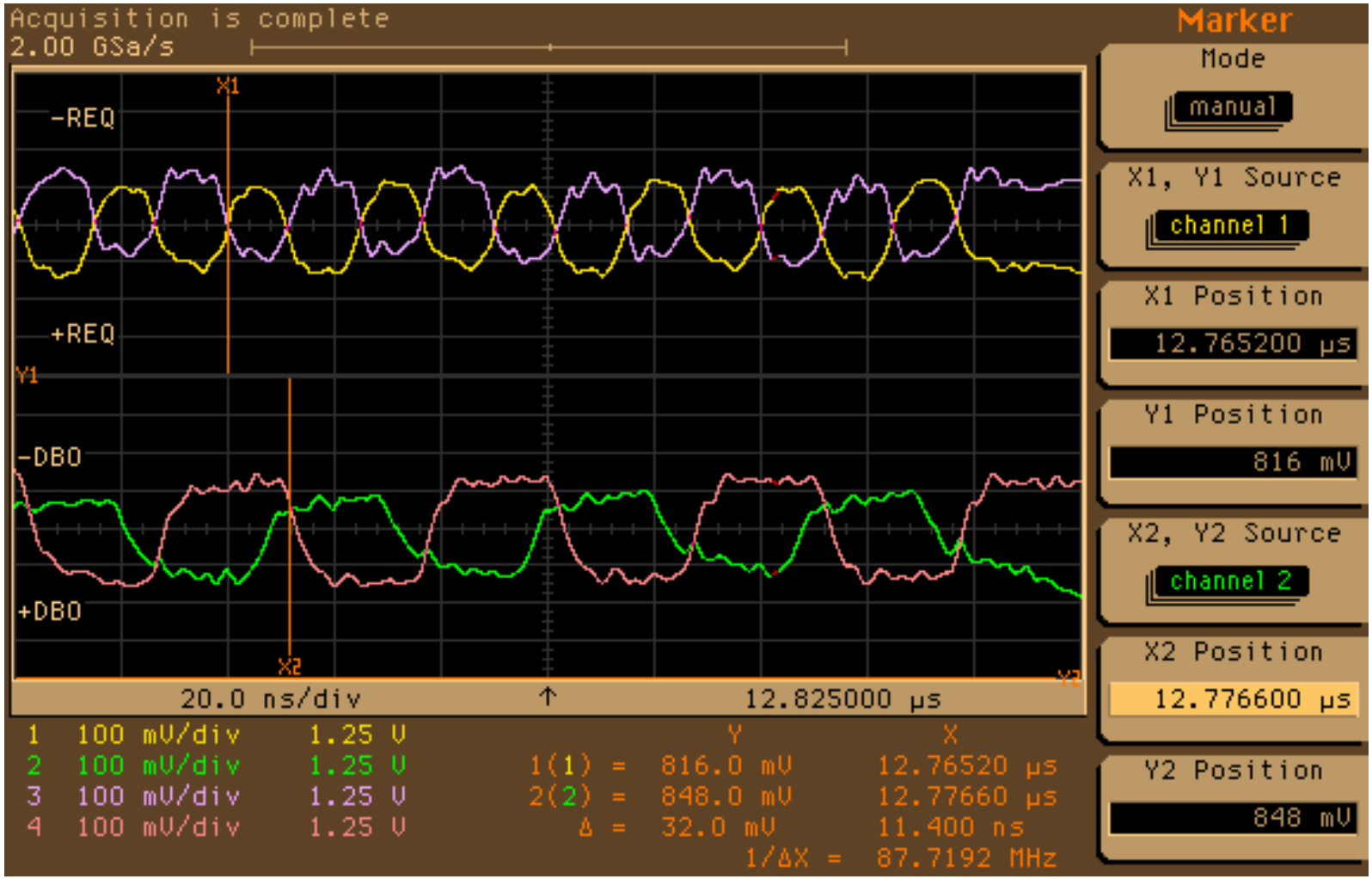
3pF graph, Read, data taken at the HBA, drive at position B



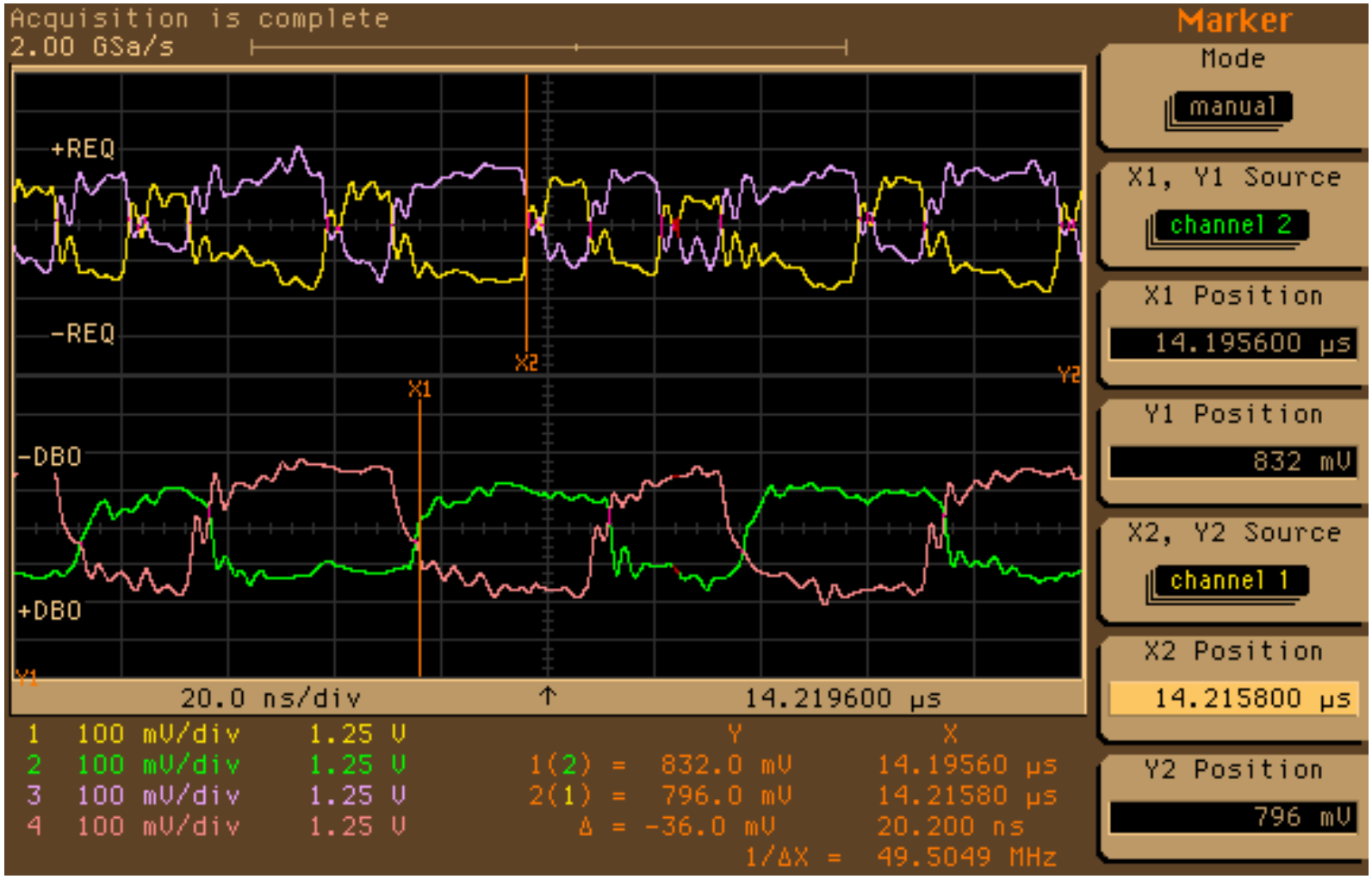
3pF graph, Read, data taken at the HBA, drive at position C



10pF graph, Read, data taken at the HBA, drive at position A



10pF graph, Read, data taken at the HBA, drive at position B



10pF graph, Read, data taken at the HBA, drive at position C