

Driver Current for ATA-3

1) Page 21, Table 2, IOL(min)

Experiments and simulation by several independent developers, including WD's PIG (Physical Interface Group), indicate that the impedance of 12ma drivers is too low to match the impedance of the 18 inch ata cable. 12ma drivers equate to an impedance of 35 ohms compared with the optimal impedance for the cable of 80-120 ohms. 4-6ma drivers have been proven to match the 80-120 ohm impedance of the ata cable thereby minimizing settling times and the potential for data integrity issues across a wide range of configurations. This is a serious inter-operability issue witch affects the integrity of the standard we are about to publish.

The 12ma driver requirement is a hold over from the days when IDE controllers were forces to drive very large capacitive buses. Simulation has shown that 4ma drivers can reliably drive these Legacy configurations at Legacy timings because of improvements in the access times for VLSI devices compatible with ata-2 timings.

Recommendation: "Change IOL(min) in table 2 from 12ma to 4ma for all signals except DASP and IOCS16. DASP and IOCS16 need the higher current to meet legacy timing and signal integrity issues.
