

## Start-up aims to out-perform STEC

### Piles into SAS SSD fray

By **Chris Mellor**, The Register

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Another start-up wanting to take a pot at STEC, the leader in the storage array solid state disk market, has emerged. [Pliant Technology](#) is focussing on the SAS interface, leaving Fibre Channel the sole preserve of STEC.

STEC dominates what is called the enterprise flash drive (EFD) market, with OEMs such as EMC, HP, IBM and others. Intel is trying to compete but has no Fibre Channel interface for its SSDs. It relies on SATA, which rules it out of the drop-in Fibre Channel hard drive replacement market which has lead STEC to its current \$1.65bn valuation.

STEC's ZeusIOPS SSD comes in 3.5-inch format with a Fibre Channel interface, and in 2.5-inch format with a SAS interface. Both formats have performance of 45,000 random IOPS, 16,000 sustained IOPS, 220MB/sec read bandwidth and 115MB/sec write bandwidth.

A start-up called [SandForce](#) has an enterprise SSD controller product, the SF1500, which has better bandwidth than STEC; 250MB/sec read or write, but just 30,000 random IOPS. It only comes with a SATA interface, again leaving STEC supreme and unchallenged in the Fibre Channel interconnect space, but troubled in the SAS interconnect area. That is where Pliant is going to be attacking as well.

Details about Pliant's EFD have emerged from Stifel Nicolaus analyst Aaron Rakers. The drive comes in both 2.5-inch and 3.5-inch form-factors, with an SAS interface. Pliant claims it has two to four times the read performance of STEC's product. That means 90,000 to 180,000 read IOPS, which is impressive. The company says it can saturate an SAS link with a bandwidth of 500MB/sec; we don't know if this is for reading data, writing data, or both, though.

Pliant says its bandwidth performance copes well with varying block sizes and it has, it claims, better performance in variable read/write environments, with less impact on performance as the proportion of write operations increases.

The controller is based on an ASIC (application-specific integrated circuit) and Pliant's own microprocessors. The drive uses single-level cell (SLC) flash, like STEC, which is faster than the less expensive multi-level cell (MLC) flash. Rakers understands that the Pliant controller has more channels than the eight used by STEC, which could well improve bandwidth.

The company is talking about qualification with a number of potential first rank storage and server OEMs; indeed, qualification may already have started. Initial deliveries of product to potential OEMs started in late 2008. More news should be forthcoming by the end of the year.

Pliant will build its drives through contract manufacturers, with a US-based partner already identified.

The company [received](#) \$8m of initial funding in February 2008. The interview with Rakers suggests something is coming to the boil at Pliant - perhaps positive signs are coming on the OEM qualification front.

Pliant said C-round funding of \$15m was obtained in March this year. At that time it said the cash would be used as working capital to support the volume production ramp-up of its first EFD products and the expansion of its product set.

The fact that this was described as a C-round, with the February 2008 funding called an A-round, means there must have been a B-round. It didn't disclose one but total funding has been reported as \$27m, indicating a \$4m B-round sometime between February 2008 and March 2009.

Pliant was founded by Mike Chenery, its president and former VP for product engineering at Fujitsu, along with Doug Prins and Aaron Olbrich. Prins is the chief architect and a former consultant for Fujitsu, Emulex and Q-Logic. Olbrich is the chief technology officer and is also an ex-Fujitsu employee.

Prins and Olbrich have filed a US patent application, number 20070294468, which refers to an SSD with the same bandwidth for both reading and writing. It can also dynamically configure its available set of processors into separate read and write sets.

If Pliant has applied the same kind of thinking to wear-levelling, then we could be looking at SSDs with much higher bandwidth than STEC's current drives and, possibly, a much longer working life. This assumes of course that STEC doesn't have second generation ZeusIOPS SSDs already in its labs.

Pliant is not exhibiting at the Flash Memory summit in Santa Clara later this month, which indicates that any product launch will be later this year. ®