

## Micron and Hynix Prevail in Rambus Suit



# OBJECTIVE ANALYSIS

## SEMICONDUCTOR MARKET RESEARCH



### Court Finds No Conspiracy to Exclude RDRAM from Market

After years of wrangling and, finally, many weeks of deliberation, the jury came forth on November 16, 2011 to conclude that Rambus had not proven that Micron Technology and Hynix (among others) had conspired to prevent Rambus' RDRAM from achieving high production and sales volumes, and therefore profits, for Rambus in an industry event about a decade ago. The original lawsuit was filed by Rambus in 2004, more than four years after the events in question. The size of the potential judgment, nearly \$4B with damaged potentially trebled (to ~\$13B), had played havoc with Rambus' stock for the past few years, and cast a dark shadow over the business performance and share prices of Hynix and Micron for a like period. It was a huge financial claim, with a prize or penalty which dwarfed all three companies' normal business income.

The ruling said nothing at all about Rambus' main business thrust, namely developing and licensing semiconductor (mainly DRAM) IP, though the outsized potential for the legal judgment here was certainly a huge distraction for all three companies, for a long time. Rambus still has several patent licensing legal tussles with these, and other companies, that remain to be resolved; some have yet to be heard, and some (e.g., Hynix) have been ruled on (in this case, in favor of Rambus), but are under appeal.

Rambus' patent licensing business continues forward, generating more than \$216M for the nine-months to date for 2011, and more than \$90M in their most recent (3rd) quarter. As large as this potential "conspiracy" judgment was, it was also very expensive to litigate, and had to have been a major distraction for Rambus. While this gorilla danced in the background, Rambus made successful licensing settlements with Samsung and Qimonda over the years, litigated the above-mentioned Hynix patent suit...for \$360M...and, all in all, signed or litigated DRAM technology licensing deals totaling more than \$2B over their lifetimes.

Whatever was claimed in court, we believe that, in fact, RDRAM failed to take off due to many decisions, and the immutable nature of the industry, and not a part of any conceivable industry conspiracy. In the late 1990s, every DRAM maker had to decide what the mix of various DRAMs was likely to be and invest accordingly, and what to design. Rambus' RDRAM had its proponents and was pushed very hard by Intel. But it had legions of detractors, too, who were being asked to invest hundreds of millions of dollars to build RDRAMs, based on Intel's promise that RDRAM would become the de facto DRAM high-volume standard (only to have Intel waffle on the very last instant and also support

standard SDRAMs with their chipsets). The industry had lost billions of dollars as recently as 1998, when DRAM sales were about \$14B and losses were \$12B, so cash was tight and had to be spent wisely...and cautiously. The take-up of Rambus' earlier innovative DRAM interface, Concurrent RDRAM, was quite modest, and DRAM makers, and the industry at large, have always been wary or suspicious of non-standard products, even those which demonstrated superior performance.

It is important to note that the subsequent industry downturn in 2001-03 was also a financial disaster for DRAM makers, who lost tens of millions of dollars, annually, due to weakened overall demand....dot-com bust and economic recession... and a supply overshoot for SDRAMs (the competitor to RDRAM). These losses, due to too-low SDRAM prices, cannot in any reasonable way be claimed to have been deliberate, or targeted at keeping RDRAM from the market. DRAM makers like to make money, like everyone in the industry. Indeed, during this specific timeframe, DRAM makers conspired to put the brakes on price declines, to reduce their losses... and were found guilty and penalized of "collusion to fix prices" higher than they otherwise might have been. That "price fixing" was confirmed by the courts years ago.

At the end of the day, each company had to decide for itself the true prospects for RDRAM, and the expectations and investment varied from company to company, and varied widely. Market leader Samsung, who was the biggest in every DRAM product line, invested the most heavily. They had plenty of money. Elpida, though a much smaller player and then-recently formed from NEC and Hitachi, also was a leader. But all other DRAM makers were strung out back to many smaller manufacturers, who declined to take the RDRAM license, and not to set their manufacturing to build any RDRAMs...there was too much uncertainty, and there was enough DRAM market outside the "PC DRAM" space to provide good sales until it was more clear that RDRAM would be the dominant play that Intel expected.

When the overall DRAM market collapsed in 2001, Elpida and Samsung made huge profits in RDRAM, owning maybe 80% of the market with its stable prices; all others rode the SDRAM roller coaster down to a bath of red ink; even Samsung lost money in a few quarters in 2001. This was not deliberate, this was "DRAM Market Dynamics", which we see every 3-4 years....feast or famine, slow attrition among the supplier base, and industry consolidation.

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Lane Mason

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**Semiconductor Market Research**

[www.Objective-Analysis.com](http://www.Objective-Analysis.com)

**PO Box 440**

**Los Gatos, CA 95031-0440**

**USA**

**+1 (650) 248-6178**