

# MICROPROCESSOR REPORT

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## AMD Loses 287 Microcode Case

### Jury Verdict Likely to Delay AMD's 486, Hinder Marketing

By Michael Slater

In a stunning blow to AMD's microprocessor plans, a jury has ruled in favor of Intel in the long-pending lawsuit regarding AMD's right to use Intel's microcode in its 287 math coprocessor. The ruling shocked industry observers because AMD was believed to have a strong case, prompting one analyst to call it the "Rodney King case of the semiconductor industry."

At issue was the interpretation of a 1976 agreement between Intel and AMD that grants AMD the right to copy Intel microcode. The disputed section of the agreement is as follows:

"INTEL grants to AMD a paid-up, non-exclusive, royalty-free license under all INTEL copyrights... permitting AMD to make the following copies (and only the following copies):

- (a) To copy published INTEL instruction manuals and data sheets;
- (b) To copy microcodes contained in INTEL microcomputers and peripheral products sold by INTEL; and
- (c) To copy mnemonics published by INTEL in its manuals."

It is item (b) above that is at the center of the dispute. Initially, Intel argued that the right to copy did not imply the right to distribute, but this argument was not presented at the trial. Instead, the trial focused on the issue of whether the term "microcode" referred to programs in ROM on board-level products, or whether it could be applied to microcode within the 287. At the time the 1976 agreement was made, of course, the 287 did not exist, and Intel did not have any microprocessors that included microcode. The agreement was extended in 1982, however, when the 8086 and 8087 were already on the market and did contain microcode.

Both Intel and AMD submitted questions to be put

to the jury. AMD proposed more general questions, seeking to establish a broad microcode license, while Intel proposed more narrow ones; the judge selected Intel's. The questions put to the jury were as follows:

"Did AMD prove by a preponderance of the evidence that the disputed language 'microcodes contained in Intel microcomputers and peripheral products sold by Intel' means microcode contained in Intel's 80287?"

"Did Intel prove by a preponderance of the evidence that in 1982 the parties did not agree as to the meaning of the disputed language?"

"Did AMD prove by a preponderance of the evidence that the disputed language... means that Intel permitted AMD to have a third party such as MIC make copies of Intel microcode?"

"Did Intel prove by a preponderance of the evidence that AMD willfully infringed Intel's copyright?"

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The jury answered "no" to the first three questions, and deadlocked on the fourth; Intel agreed to withdraw this last question. One interpretation of the jury's verdict is that they simply didn't find any of the arguments convincing; they didn't think anything was proved by a preponderance of the evidence. Because it was a jury trial, unlike most other recent high-technology court battles, there is no document from the judge explaining the reasoning that led to the verdicts.

### 486 Implications

While the ruling applies directly only to AMD's 287, it establishes a precedent for the interpretation of the 1976 agreement that could prevent AMD from using Intel's microcode in its forthcoming 486-compatible microprocessor. While AMD hopes to reverse the decision, it is clear that the company can't afford to base its product strategy on this possibility. AMD has said that it has a clean-room version of the microcode in development, but it will not say whether it is complete or how far along it is. The company has conceded that there will be some unspecified delay in its 486 introduction. In response to the loss of the 287 case, AMD has been running two page ads explaining its situation, claiming "AMD will be a major player in the 486 market in 1993."

Within the scale of the 486 marketplace, the cost to produce clean-room microcode is minor. In the long run, even a delay of six months or so might not be terribly significant, since the 486 won't hit its peak volumes for another year or two. Switching to clean-room microcode, however, would make it more of a challenge for AMD to convince customers of its chip's compatibility.

### 386 Implications

Whether the ruling will have any effect on AMD's 386-family processors hinges on Intel's success in overturning the award in the arbitration between the two companies regarding their ill-fated technology exchange pact. The arbitration did not specifically address the microcode license issue, but in compensation for Intel's breach of good faith in regard to its agreement with AMD, the arbitrator awarded AMD a "holy water license," as Intel has called it, that "blesses" AMD's 386 design and grants AMD immunity from any claims of infringement. If this award is upheld, the microcode case will not affect AMD's 386 design.

Intel's lawsuit against AMD's 386, claiming microcode infringement, is awaiting trial in the federal court in San Jose. According to Intel Counsel Tom Dunlap, Intel will probably file a motion for either a summary judgment or a preliminary injunction in the 386 case, based on Intel's success in the 287 microcode case,

which would force the judge to address the issue of whether the arbitration ruling can be used as a defense. Intel argues that the arbitration ruling, which was confirmed by the California Superior Court, should not be binding in federal court. Intel is also appealing the state ruling confirming the arbitration award.

AMD has filed a motion to stay the federal case regarding the 386 microcode until the state appeal regarding the arbitration decision is heard, since the status of the arbitration ruling is critical to the 386 case. A hearing on this motion is scheduled for July 30.

The validity of the arbitration award is the big issue remaining. The stakes here are extraordinarily high; if Intel succeeds in overturning the arbitration award or convincing the federal court that it should not be bound by it, AMD could be liable to Intel for all of its profits on the 386—an amount Intel has estimated at \$600 million. An award of this size could cripple the company.

### What's Next?

The microcode copyright issue was initially the first of three modules in the 287 case. The remaining two modules address issues of misrepresentation and mask-work infringement. Both companies have agreed to drop these two remaining modules so that motions regarding the first module can be heard.

AMD plans to file a motion requesting the judge to overturn the jury's verdict, as well as a motion for a new trial, on the basis that the jury's verdict was not supported by the evidence. If these motions fail, AMD will appeal. Both companies also seek to clarify whether the ruling applies only to the 287 microcode, or whether it applies to microcode in microprocessors—including the 386—as well. Rulings on these motions are expected sometime in August.

AMD claims that Intel has been telling AMD's customers in Taiwan that AMD's 386 chips are now illegal, and that systems or motherboards may be seized by U.S. Customs if they contain AMD 386 processors. AMD sought a preliminary injunction preventing Intel from continuing this alleged activity. Intel denied making such claims to any AMD customers and said that it had no plans to bring any customs action. The judge did not grant the preliminary injunction, but he did extract from Intel a promise to give the court and AMD 48 hours notice if they decide to initiate any customs action.

The most significant outcomes of the 287 microcode case are likely to be a delay in the introduction of AMD's 486 and a higher level of uncertainty about that device's compatibility. This may give Cyrix and C&T more of an opportunity to capture market share for their microprocessors. Ironically, however, the reputation of the Cyrix and C&T parts helps AMD, in that these chips showed that processors with clean-room microcode can still maintain complete compatibility. ♦