IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the *Inter Partes* Review of U.S. Patent No. 6,356,122

Trial No.: IPR2015-00148

Issued: March 12, 2002

Filed: August 4, 1999

Inventors: Piyush Sevalia, *et al.*

Assignee: PLL Technologies, Inc.

Title: CLOCK SYNTHESIZER WITH PROGRAMMABLE INPUT- OUTPUT PHASE RELATIONSHIP

DECLARATION OF DONALD ALPERT, Ph.D., UNDER 37 C.F.R.§ 1.68, IN SUPPORT OF PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

I, Dr. Donald Alpert, do hereby declare:

1. I am making this declaration in support of Petitioner's Reply to Patent Owner's Response at the request of Xilinx, Inc. ("Xilinx") in the matter of the *Inter Partes* Review of U.S. Patent No. 6,356,122 ("the '122 patent"), Case No. IPR2015-00148.

2. I previously submitted a declaration in this matter. [Ex. 1010] In that Declaration, I provided my opinions concerning the patentability of certain claims of the '122 patent in consideration of the prior art references of Exhibits 1003 – 1009. Of these references, U.S. Patent No. 4,611,230 ("Nienaber") (Ex. 1003) and U.S. Patent No. 5,446,867 ("Young") (Ex. 1004) are discussed below.

3. In preparing this Declaration, I have been asked to review Patent Owner's Response (Paper 14) and the Declaration of Dr. John P. Hayes (Ex. 2002), prepared on behalf of the Patent Owner. In preparing this Declaration, I also considered the following materials:

- Institution Decision (Paper 8);
- Exhibits 2001- 2012, submitted by the Patent Owner;
- Patent Owner Preliminary Response (Paper 6);
- *IEEE Standard Glossary of Computer Hardware Terminology*, IEEE Std 610.10-1994 (Ex. 1013);
- McCharles, R.H. and Hodges, D., "Charge circuits for analog LSI," in IEEE Transactions on Circuits and Systems, vol. 25, no.7, Jul 1978, pp. 490-497 (Ex. 1015);
- U.S. Patent No. 3,691,297 to Merrell, et al. (Ex. 1016);
- U.S. Patent No. 3,426,344 to Clark (Ex. 1017);
- IEEE Standard Dictionary of Electrical & Electronics Terms (6th ed. 1996) (selected pages) (Ex. 1018);
- Transcript of November 20, 2015 Deposition of John Hayes (Ex. 1019);
- U.S. Patent No. 5,654,657 to Pearce (Ex. 1020);
- U.S. Patent No. 5,706,004 to Yeung (Ex. 1021);
- U.S. Patent No. 2,931,024 to Slack (Ex. 1023);
- Wilcox, Milton, "A Highly Stable Integrated Sync System," in IEEE Transactions on Consumer Electronics, vol. CE-24, no.3, Aug. 1978, pp. 284-290 (Ex. 1024);
- Doyle, N.; Hamaoui, H.; Nichols, J., "Some Applications of Digital Techniques in TV Receivers," in IEEE Transactions on Broadcast and

Television Receivers, vol. BTR-18, no.4, Nov. 1972, pp. 245-249 (Ex. 1025); and

- U.S. Patent No. 4,409,665 to Tubbs (Ex. 1026).

4. In this Declaration, I document certain issues where I disagree with the opinions expressed in Patent Owner's Response or Dr. Hayes' Declaration. My silence in this Declaration about any other issue in no way means that I agree with opinions on that issue expressed in Patent Owner's Response or Dr. Hayes' Declaration.

5. In my previous declaration [Ex. 1010], I provided a summary of my professional background and qualifications, relevant legal standards, and summaries of the '122 patent and the references of Exhibits 1003 through 1009.

I. Claim Construction for "clock"

6. In Ex. 2002 at Section VII.A, Dr. Hayes documents his opinion that the broadest reasonable interpretation of the term "clock" for the '122 patent is a "periodic signal used for synchronization in a digital system." [Ex. 2002 par. 42] The basis for Dr. Hayes' opinion starts with citations to definitions for the term "clock" that appear in in the *IEEE Standard Dictionary of Electrical and Electronics Terms* ("IEEE Standard Dictionary"), including "a periodic signal used for synchronization." [Ex. 2002 par. 40, citing Ex. 2007 at p. 163] In my opinion, this IEEE Standard Dictionary definition is consistent with the broadest

reasonable interpretation of the term, as well as with the Board's interpretation of "a periodic timing control signal" [Paper 8 at p. 9].

A clock is not limited to digital systems.

7. In Ex. 2002 at par. 42, Dr. Hayes contends that the interpretation for clock should be further limited beyond the IEEE Standard Dictionary's definition to digital systems only: "[a] periodic signal used for synchronization in a digital system." The basis documented for this opinion includes two contentions: (1) the IEEE Standard Dictionary limits the cited definition of "clock" to digital computer systems, and (2) the term "clock" has no recognized meaning in connection with analog circuits. These contentions are wrong for at least the reasons explained below. Similarly, I disagree with Patent Owner's contention that goes beyond the scope of Dr. Hayes' declaration: "the IEEE Dictionary demonstrates that a 'clock' signal is *inherently* for digital systems." [Paper 14 at. p. 12, emphasis added]

8. Dr. Hayes asserts that the IEEE Standard Dictionary definition for "clock" should be limited to digital systems because the cited definition relates to the field of computers.

> **42.** All of the definitions of the term "clock" or "clock signal" are in the "C" category, which signifies "computer." Since all the relevant definitions of the term "clock" in the IEEE Dictionary originate from the field of computers or at least digital systems, the interpretation of the term "clock" in this case should be as follows: "Periodic signal used for synchronization in a digital system."

[Ex. 2002 at par. 42]

9. This assertion is incorrect at least because the definitions from the "computer" category are not limited to digital systems. Rather, the "computer" category includes definitions for numerous analog and mixed signal terms. For example, the "computer" category includes the following definitions for "analog," "analog computer," "hybrid circuit," and "operational amplifier":

analog (1) (analog computer) Pertaining to representation by means of continuously variable physical quantities; for example, to describe a physical quantity, such as voltage or shaft position, that normally varies in a continuous manner, or devices such as potentiometers and synchros that operate with such quantities. (C) 165-1977w
(2) (data transmission) Used to describe a physical quantity, such as voltage or shaft position, that normally varies in a continuous manner. (PE) 599-1985w
(3) Pertains to information content that is expressed by signals dependent upon magnitude. *See also:* control system, feedback. (IA) [60]
(4) (computers) Pertaining to data in the form of continuously variable physical quantities. *Contrast:* digital. *See also:* analog computer. (C) 1084-1986w, 610.10-1994

[Ex. 1018 p. 9]

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.