

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

XILINX, INC., ADVANCED MICRO DEVICES, INC.,
and ATI TECHNOLOGIES ULC,
Petitioner,

v.

SENTIENT SENSORS, LLC,
Patent Owner.

Case IPR2023-00195
Patent 6,938,177

PETITIONER'S UPDATED EXHIBIT LIST

UPDATED EXHIBIT LIST

- 1001 U.S. Patent No. 6,938,177 to Blemel (“the ’177 patent”)
- 1002 Declaration of Dr. Stan Shanfield, Ph.D. (with Curriculum Vitae)
- 1003 U.S. Patent No. 6,148,399 to James C. Lyke (“**Lyke**”)
- 1004 P. Dehkordi, T. Powell and D. Bouldin, *Development of a DSP/MCM subsystem assessing low-volume, low-cost MCM prototyping for universities*, Proceedings 1996 IEEE Multi-Chip Module Conference (Cat. No. 96CH35893), 1996, pp. 89-94 (“**Dehkordi**”)
- 1005 G. A. Frantz, K. Lin, J. B. Reimer and J. Bradley, “The Texas Instruments TMS320C25 Digital Signal Microcomputer,” in IEEE Micro, vol. 6, no. 6, pp. 10-28, Dec. 1986 (“**Frantz**”)
- 1006 J. Faura, C. Horton, P. van Duong, J. Madrenas, M. A. Aguirre and J. M. Inerser, *A novel mixed signal programmable device with on-chip microprocessor*, Proceedings of 1997 IEEE Custom Integrated Circuits Conference, 1997, pp. 103-106 (“**Faura**”)
- 1007 U.S. Patent No. 5,663,734 to Norman F. Krasner (“**Krasner**”)
- 1008 U.S. Patent No. 4,279,020 to Ronald W. Christian et al (“**Christian**”)
- 1009 U.S. Patent No. 5,675,824 to Randy C. Steele (“**Steele**”)
- 1010 File Wrapper of the ’177 Patent
- 1011 Declaration of June Munford
- 1012 Claim Construction Order in *Sentient Sensors v. Cypress Semiconductor Corp.*, 19-1868 (MN), (Jan. 28, 2021, D. Delaware) (D.I. 89)
- 1013 Data Sheet for Motorola 96002 Digital Signal Processor
- 1014 Data Sheet for Xilinx XC4000E and XC4000X Series (including Xilinx XC4010)
- 1015 K. Avery and D. Alexander, *Recent progress in space-based micro-controller design*, 16th DASC. AIAA/IEEE Digital Avionics Systems

- Conference. Reflections to the Future. Proceedings, 1997, pp. 2.1-7 (“Avery”)
- 1016 T. Goforth, S. Cannon, J. Lyke, *Space Testing of the Advanced Instrument Controller*, Proceedings of the 13th AIAA/USU Conference on Small Satellites, Aug. 23–26, 1999, Logan UT, SSC99-XI-3 pp. 1-11 (“Goforth”)
- 1017 L. Muller, M. H. Hecht, L. M. Miller, H. K. Rockstad and J. C. Lyke, *Packaging and qualification of MEMS-based space systems*, Proceedings of Ninth International Workshop on Micro Electromechanical Systems, 1996, pp. 503-508 (“Muller”).
- 1018 K. G. Blemel, *Reactive Prognostic Management of Corrosion With Autonomous Sensors*. Paper presented at the CORROSION 2000, Orlando, Florida, March 2000.
- 1019 S. Hauck, *The Roles of FPGAs in Reprogrammable Systems*, Proceedings of the IEEE, Vol. 86, No. 4, pp. 615-638, April 1998
- 1020 Complaint in *Sentient Sensors v. Xilinx*, 22-cv-173 (D. Delaware) D.I. 1.
- 1021 Docket in *Sentient Sensors v. Xilinx*, 22-cv-173 (D. Delaware)
- 1022 Xilinx Notice of Stipulation Letter
- 1023 U.S. Patent No. 5,867,535 to William C. Phillips (“Phillips”)
- 1024 U.S. Patent No. 6,178,494 to Steve M. Casselman (“Casselman”)
- 1025 U.S. Patent No. 5,574,930 to Richard P. Halverson, Jr. (“Halverson”)
- 1026 U.S. Patent No. 5,872,960 to Oved Oz (“Oz”)
- 1027 T. Nishitani, I. Kuroda, Y. Kawakami, H. Tanaka and T. Nukiyama, *Advanced single-chip signal processor*, ICASSP ‘86. IEEE International Conference on Acoustics, Speech, and Signal Processing, 1986, pp. 409-412 (“Nishitani”)
- 1028 P. R. Christensen, et al. (2001), *Mars Global Surveyor Thermal Emission Spectrometer experiment: Investigation description and surface science results*, J. Geophys. Res., 106 (E10), 23823–23871 (“Christensen”)
- 1029 U.S. Patent No. 5,936,562 to Todd L. Brooks (“Brooks”)

- 1030 U.S. Patent No. 5,861,831 to Franklin M. Murden (“Murden”)
- 1031 U.S. Patent No. 5,638,092 to Tommy K. Eng (“Eng”)
- 1032 J. Faura, J.M. Moreno, M.A. Aguirre, P. van Duong, J.M. Insenser, *Multicontext dynamic reconfiguration and real-time probing on a novel mixed signal programmable device with on-chip microprocessor*. In: Luk, W., Cheung, P.Y.K., Glesner, M. (eds) Field-Programmable Logic and Applications. FPL 1997. Lecture Notes in Computer Science, vol 1304. Springer (1997) (“FauraMoreno”)
- 1033 Y. Tian, J. Ying, X. Ye, W. Gu, *DDGIPS: a general image processing system in robot vision*; Proc. SPIE 4212, Reconfigurable Technology: FPGAs for Computing and Applications II, Oct. 6, 2000 (“Tian”)
- 1034 U.S. Patent No. 5,874,834 to Bernard J. New (“New”)
- 1035 P. Marchal, *Field-programmable gate arrays*, Communications of the ACM, Vol. 42, No. 4 (1999), p. 57-59 (“Marchal”)
- 1036 I. Kostarnov, S. Morley, J. Osmany, C. Solomon, *A reconfigurable approach to low cost media processing*. In: Luk, W., Cheung, P.Y.K., Glesner, M. (eds.) Field-Programmable Logic and Applications. FPL 1997. Lecture Notes in Computer Science, vol 1304. Springer, Berlin, Heidelberg (“Kostarnov”)
- 1037 U.S. Patent No. 5,757,690 to Scott H. R. McMahon (“McMahon”)
- 1038 Analog Devices, ADuC824, MicroConverter, Dual-Channel 16-/24-Bit ADCs with Embedded FLASH MCU, 2001
- 1039 Analog Devices, ADuC824 FAQ, January 2001
- 1040 U.S. Patent No 5,892,962 to Jocelyn Cloutier (“Cloutier”)
- 1041 U.S. Patent Publication No. to 2002/0129191 to Behram DaCosta (“DaCosta”)
- 1042 de Lima, F.G., *Designing A Radiation Hardened 8051-like Micro-Controller*, Proceedings 13th Symposium on Integrated Circuits and Systems Design (Cat. No. PR00843), 18-24 September 2000 (“de Lima”)

- 1043 J. J. Wang et al., *SRAM based re-programmable FPGA for space applications*, in IEEE Transactions on Nuclear Science, vol. 46, no. 6, pp. 1728-1735, Dec. 1999
- 1044 U.S. Patent No. 5,936,971 to Ellyahou Harari (“Harari”)
- 1045 U.S. Patent No. 5,261,109 to Sudarshan B. Cadambi (“Cadambi”)
- 1046 T. Griffin, *Multichip Modules Including Processing: A Literature Survey*, Army Research Laboratory publication ARL-MR-257, August 1995
- 1047 J. Nedeau, D. King, D. Lanza, K. Hunt and L. Byington, *32-bit radiation-hardened computers for space*, 1998 IEEE Aerospace Conference Proceedings (Cat. No. 98TH8339), 1998, pp. 241-253 vol. 2
- 1048 Transcript of Board Call held August 1, 2023
- 1049 Declaration of Jeffrey Shneidman in support of Motion for *Pro Hac Vice* Admission
- 1050 Supplemental Declaration of Dr. Stan Shanfield, Ph.D.
- 1051 Joint Claim Construction Brief in *Sentient Sensors, LLC v. Cypress Semiconductor Corp.*, ECF No. 63 in 19-cv-01868-MN (D. Del.)
- 1052 NEW IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONICS TERMS, IEEE Press, 1993 (highlighted definition: “parallel”)
- 1053 Wikipedia entry: microprocessor (December 18, 2023 version)
- 1054 U.S. Patent No. 5,317,696 to Rolf B. Hilgendorf (“Hilgendorf”)
- 1055 Image of Intel 4004
- 1056 D.A. Doane, P. D. Franzon, eds. *Multichip Module Technologies and Alternatives: The Basics*, Van Nostrand Reinhold, 1993 (“Doane”) (highlighted)
- 1057 M. Alderighi, F. Casini, S. D’Angelo, D. Salvi and G. R. Sechi, *A fault-tolerance strategy for an FPGA-based multi-stage interconnection network in a multi-sensor system for space application*," Proc. 2001 IEEE Int’l Symposium on Defect and Fault Tolerance in VLSI Systems, San Francisco, CA, USA, 2001, pp. 191-199. (“Alderighi”)

- 1058 Diessel, O., H ElGindy, M. Middendorf, H. Schmeck, B. Schmidt, *Dynamic Scheduling of Tasks on Partially Reconfigurable FPGAs*, IEEE Proceedings-Computers and Digital Techniques, vol. 147, no. 3, pp. 181-188, ISSN 1350-2387 (2000) (“Diessel”).
- 1059 J. Emmert, C. Stroud, B. Skaggs and M. Abramovici, *Dynamic fault tolerance in FPGAs via partial reconfiguration*, Proc. 2000 IEEE Symposium on Field-Programmable Custom Computing Machines, Napa Valley, CA, USA, pp. 165-174 (2000) (“Emmert”)
- 1060 W. Fornaciari, V. Piuri, *Virtual FPGAs: Some steps behind the physical barriers*, In: Rolim, J. (eds) Parallel and Distributed Processing. IPPS 1998. Lecture Notes in Computer Science, vol 1388. Springer, Berlin, Heidelberg (1998) (“Fornaciari”)
- 1061 L. Levinson, R. Manner, M. Sessler and H. Simmler, *Preemptive multitasking on FPGAs*, Proc. 2000 IEEE Symposium on Field-Programmable Custom Computing Machines, Napa Valley, CA, USA, pp. 301-302 (2000) (“Levinson”)
- 1062 M. Ade, R. Lauwereins and J. A. Peperstrate, *Implementing DSP applications on heterogeneous targets using minimal size data buffers*, Proc. 7th IEEE International Workshop on Rapid System Prototyping. Shortening the Path from Specification to Prototype, Thessaloniki, Greece, pp. 166-172 (1996) (“Ade”)
- 1063 Microsoft Computer Dictionary, 5th Edition (2002) (highlighted definitions: “MIMD”, “multiprocessing”)
- 1064 W. Stallings, COMPUTER ORGANIZATION AND ARCHITECTURE: DESIGNING FOR PERFORMANCE (Prentice Hall 4th ed. 1996) (highlighted)
- 1065 Deposition Transcript of John C. Peck
- 1066 U.S. Patent No. 5,978,260 to Stephen M. Trimberger *et al.* (“Trimberger”)
- 1067 Oxford English Dictionary (<http://www.oed.com>: “computational”)
- 1068 Comparison “redline” between POPR and POR as to Ground 4
- 1069 Petitioner’s Demonstratives

Respectfully submitted,

Dated: June 20, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(1) and 42.6(e)(4)(iii), the undersigned certifies that on June 20, 2024, a complete and entire copy of this Petitioner's Updated Exhibit List and Exhibit 1069 were provided by email to the Patent Owner by serving the email correspondence addresses of record as follows:

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