UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLKSWAGEN GROUP OF AMERICA, INC.
Petitioner

v.

ADVANCED SILICON TECHNOLOGIES LLC
Patent Owner

Case IPR2016-TBA
Patent 6,630,935 B1

PETITION FOR *INTER PARTES* REVIEW

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V. TECHNICAL BACKGROUND 5

A. A graphics processor includes specially-designed hardware for graphics-processing tasks. 5

B. Matsushita designed a multithreaded processor for computer graphics that improved the utilization of functional units. 8

C. The challenged claims recite the functionality of a conventional multithreaded processor that was predicted by industry experts years before the '935 patent was filed. 11

VI. CLAIM CONSTRUCTION 15

VII. IDENTIFICATION OF CHALLENGE 16

A. Ground 1: Claims 1, 2, and 7 are obvious over Hirata in view of Kimura. 20

1. Claim 1—Hirata and Kimura teach or suggest all the features of this claim. 20

2. Claim 2—Hirata and Kimura teach or suggest all the features of this claim. 30

3. Claim 7—Hirata and Kimura teach or suggest all the features of this claim. 31

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B. Ground 2: Claim 3 is obvious over Hirata in view of Kimura and further in view of Hennessy. 32

C. Ground 3: Claims 4 and 5 are obvious over Hirata in view of Kimura and further in view of Watkins. 38

1. Claim 4—Hirata, Kimura, and Watkins teach or suggest all the features of this claim. 38

2. Claim 5— Hirata, Kimura, and Watkins teach or suggest all the features of this claim. 39

D. Ground 4: Claims 6 and 8 are obvious over Kimura in view of Hirata and further in view of Rentschler. 40

1. Claim 6—Kimura, Hirata, and Rentschler teach or suggest all the features of this claim. 41

2. Claim 8—Kimura, Hirata, and Rentschler teach or suggest all the features of this claim. 43

E. Ground 5: Claims 9-18 are obvious over Hirata in view of Kimura, Hennessy, Watkins, and Rentschler 44

1. Claim 9—Kimura, Hirata, Hennessy, Watkins, and Rentschler teach or suggest all the features of this claim. 45

2. Claim 10—Kimura, Hirata, Hennessy, Watkins, and Rentschler teach or suggest all the features of this claim. 48

3. Claim 11—Kimura, Hirata, Hennessy, Watkins, and Rentschler teach or suggest all the features of this claim. 49

4. Claim 12—Kimura, Hirata, Hennessy, Watkins, and Rentschler teach or suggest all the features of this claim. 50

5. Claim 13—Kimura, Hirata, Hennessy, Watkins, and Rentschler teach or suggest all the features of this claim. 51

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6. Claim 14—Kimura, Hirata, Hennessy, Watkins, and Rentschler teach or suggest all the features of this claim. 51

7. Claim 15—Kimura, Hirata, Hennessy, Watkins, and Rentschler teach or suggest all the features of this claim. 52

8. Claim 16—Kimura, Hirata, Hennessy, Watkins, and Rentschler teach or suggest all the features of this claim. 53

9. Claim 17—Kimura, Hirata, Hennessy, Watkins, and Rentschler teach or suggest all the features of this claim. 54

10. Claim 18—Kimura, Hirata, Hennessy, Watkins, and Rentschler teach or suggest all the features of this claim. 55

VIII. MOTIVATION TO COMBINE: THE REFERENCES THEMSELVES SUGGEST THE PROPOSED COMBINATIONS. 55

A. A POSA would have been motivated to combine Hirata and Kimura and would have had a reasonable expectation of success in doing so. 56

B. A POSA would have been motivated to combine Hirata and Kimura with Hennessy and would have had a reasonable expectation of success in doing so. 57

C. A POSA would have been motivated to combine Hirata and Kimura with either Watkins and would have had a reasonable expectation of success in doing so. 57

D. A POSA would have been motivated to combine Hirata and Kimura with Rentschler and would have had a reasonable expectation of success in doing so. 58

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IX. CONCLUSION.....60

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