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Christopher J. Reckamp Vedder, Price, Kaufman & Kammholz 222 North LaSalle Street Chicago, IL 60601			EXAMINER HSU, JONI	
			ART UNIT 2676	PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

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DETAILED ACTION

Claim Objections

1. Claim 9 objected to because of the following informalities: In line 6 on page 17, the claim states “two graphics pipeline” where it should state “two graphics pipelines”. Appropriate correction is required.
2. Claim 24 objected to because of the following informalities: In lines 14-15 on page 20, the claim states “set of tiles *or* the repeating tile pattern” where it should state “set of tiles *of* the repeating tile pattern”. In line 18 on page 20, the claim states “*receive* transmit and receive” where it should state “transmit and receive”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 9, 12, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "the first pipeline" and “the second pipeline”. There is insufficient antecedent basis for this limitation in the claim.

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Claim 12 recites the limitation "the pixel data". There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the front end circuitry" and "the back end circuitry". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-8, 10-18, and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Migdal (US006762763B1) in view of Heirich (US006753878B1), further in view of Duffy (US005179640A).

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8. With regard to Claim 1, Migdal describes a graphics processing circuit, comprising a graphics pipeline (Col. 1, line 66-Col. 2, line 17) operative to process data in a corresponding set of tiles, the graphics pipeline operative to process data in a dedicated tile (Col. 8, lines 20-23).

However, Migdal does not teach that there are at least two graphics pipelines and each graphics pipeline processes data in a dedicated tile. However, Heirich describes multiple graphics pipelines (22, 24, Figure 1; Col. 5, lines 31-33) and each graphics pipeline processes data in a dedicated part of the image (PI, Col. 6, lines 1-6).

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the device of Migdal so that there are at least two graphics pipelines and each graphics pipeline processes data in a dedicated tile as suggested by Heirich. Heirich suggests that it is advantageous to use multiple graphics pipelines because each pipeline can work on a different process or part of the image without waiting for the other processes to finish first (Col. 2, lines 24-39), so using multiple graphics pipelines speeds up the processing operation.

However, Migdal and Heirich do not teach a repeating tile pattern, wherein the repeating tile pattern includes a horizontally and vertically repeating pattern of square regions. However, Duffy describes a repeating tile pattern, wherein the repeating tile pattern includes a horizontally and vertically repeating pattern of square regions (Col. 3, line 67-Col. 4, line 4; Col. 4, lines 31-32; Col. 5, lines 17-20).

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the devices of Migdal and Heirich to include a repeating tile pattern, wherein the repeating tile pattern includes a horizontally and vertically repeating pattern of square regions

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