

ORIGINAL

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BROADCOM CORPORATION

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CLERK U.S. DISTRICT COURT
CENTRAL DIST. OF CALIF.
SANTA ANA

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
SOUTHERN DIVISION

BROADCOM CORPORATION

Plaintiff,

v.

SiRF TECHNOLOGY, INC., and
CSR plc,

Defendants.

CASE No. SACV 08-546 JVS (MLGx)

BROADCOM'S FIRST AMENDED
COMPLAINT FOR PATENT
INFRINGEMENT AND FALSE
ADVERTISING AND
DEMAND FOR JURY TRIAL

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1 Plaintiff Broadcom Corporation (“Broadcom”), for its Complaint alleges as
2 follows:

3 **PARTIES**

4 1. Plaintiff Broadcom is a corporation organized and existing under the laws
5 of the state of California, with its principal place of business at 5300 California
6 Avenue, Irvine, California 92617.

7 2. Defendant CSR plc (“CSR”) is a corporation organized under the laws of
8 England and Wales.

9 3. Defendant SiRF Technology, Inc. (“SiRF”) is a corporation organized and
10 existing under the laws of the state of Delaware, with its principal place of business at
11 217 Devcon Drive, San Jose, California 95112.

12 4. SiRF is a wholly owned subsidiary of SiRF Technology Holdings, Inc.
13 (“STH”). STH is a wholly owned subsidiary of CSR.

14 5. CSR operates in the United States independently and through its
15 subsidiaries, including at least STH and/or SiRF.

16 **JURISDICTION AND VENUE**

17 6. This is an action for: (1) patent infringement under the patent laws of the
18 United States, 35 U.S.C. §§ 1 *et seq.*; (2) false advertising in violation of the Lanham
19 Act, 15 U.S.C. §§ 1051 *et seq.*; and (3) unfair competition and false advertising in
20 violation of California Business and Professions Code § 17200 *et seq.*

21 7. This Court has subject matter jurisdiction of the patent and Lanham Act
22 claims pursuant to 15 U.S.C. § 1121 and 28 U.S.C. §§ 1331 and 1338(a) because this
23 case arises under the patent and trademark laws of the United States. This Court has
24 supplemental jurisdiction of the remaining state law claims under 28 U.S.C. §§
25 1338(b) and 1367, in that the state law claims are substantially related to patent and/or
26 Lanham Act claims.

27 8. This Court has personal jurisdiction over the defendants.
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1 9. Venue for this action is proper in this district pursuant to 28 U.S.C. §§
2 1391 and 1400(b), as SiRF has regularly conducted business in this judicial district and
3 has committed, and is continuing to commit, acts of infringement in this district.

4 10. CSR owns and controls Defendant SiRF. On information and belief,
5 Defendant CSR also regularly transacts business in this district, including the purchase
6 of SiRF and the sale and offer for sale of semiconductor devices.

7 **FACTS**

8 11. This action arises out of Defendants' infringement of four patents owned
9 by Broadcom.

10 12. On December 18, 2007, United States Patent No. 7,310,104 (the "104
11 Patent"), entitled "Graphics Display System with Anti-Flutter Filtering and Vertical
12 Scaling Feature," was duly and legally issued to Broadcom as assignee of inventors
13 Alexander G. MacInnis, Chengfuh Jeffrey Tang, Xiaodong Xie, James T. Patterson,
14 and Greg A. Kranawetter. A true and correct copy of the 104 Patent is attached hereto
15 as Exhibit A.

16 13. On December 31, 2002, United States Patent No. 6,501,480 (the "480
17 Patent"), entitled "Graphics Accelerator," was duly and legally issued to Broadcom as
18 assignee of inventors Alexander G. MacInnis, Chengfuh Jeffrey Tang, Xiaodong Xie,
19 James T. Patterson, and Greg A. Kranawetter. A true and correct copy of the 480
20 Patent is attached hereto as Exhibit B.

21 14. On June 8, 2004, United States Patent No. 6,747,497 (the "497 Patent"),
22 entitled "High-Speed, Wide Bandwidth Phase Locked Loop," was duly and legally
23 issued to Broadcom as assignee of inventor Joseph M. Ingino, Jr. A true and correct
24 copy of the 497 Patent is attached hereto as Exhibit C.

25 15. On June 4, 1996, United States Patent No. 5,524,127 (the "127 Patent"),
26 entitled "Unique Word Detector and Method for Detecting a Unique Word Within One
27 of Several Windows Offset in Time," was duly and legally issued, naming inventor
28 James E. Petranovich. A true and correct copy of the 127 Patent is attached hereto as

1 Exhibit D. By assignment, Broadcom has acquired and continues to maintain all
2 rights, title, and interest in and to the 127 Patent, including the right to sue and collect
3 damages for past infringement.

4 16. Broadcom is the owner of the 104, 480, 497, and 127 Patents (“Broadcom
5 Patents in Suit”) with the full and exclusive right to bring suit to enforce the patents.

6 17. SiRF is a “fabless” chip company that uses contract manufacturers to
7 make components for Global Positioning System (“GPS”) devices.

8 18. One line of chips designed, sold and supported by Defendants are known
9 as “SiRFstar III” and “SiRFstar IV” receivers. This family of chips, sold both with and
10 without a separate “RF” or radio chip, provides GPS functionality for the devices that
11 incorporate them.

12 19. Another line of chips designed, sold, and supported by Defendants are
13 known as “SoCs” or “System on a Chip.” These chips are sold under various names
14 including “Atlas”, “Titan”, and “Prima”. SoCs are used in portable multimedia, GPS
15 enabled devices that support graphics and video processing. Collectively, the chips
16 identified in paragraphs 18 and 19 are hereinafter referred to as the “Accused
17 Products.”

18 20. A reasonable opportunity for discovery is likely to show that Defendants
19 had prior knowledge of one or more of the Broadcom Patents in Suit.

20 COUNT ONE

21 **Infringement of the 104 Patent**

22 21. Plaintiff repeats and re-alleges the allegations of paragraphs 1 through 20
23 above as if fully set forth herein.

24 22. Defendants have infringed and continue to infringe, literally and/or under
25 the doctrine of equivalents, one or more claims of the 104 Patent, directly and/or
26 indirectly, in violation of 35 U.S.C. § 271(a), (b), (c) and/or (f); at least by making,
27 using, selling, offering to sell and/or importing products in the United States (and/or
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1 contributing to or inducing others to do the same), including but not limited to the
2 “SoC” multimedia processors.

3 23. By reason of the acts alleged herein, Broadcom has suffered, is suffering,
4 and unless restrained by the Court, will continue to suffer injury to its business and
5 property rights, for which it is entitled to damages pursuant to 35 U.S.C. § 284 in an
6 amount to be proven at trial.

7 24. By reason of the acts alleged herein, Broadcom has suffered, is suffering,
8 and unless restrained by the Court, will continue to suffer irreparable harm for which
9 there is no adequate remedy at law, and for which Broadcom is entitled to permanent
10 injunctive relief pursuant to 35 U.S.C. § 283.

11 **COUNT TWO**

12 **Infringement of the 480 Patent**

13 25. Plaintiff repeats and re-alleges the allegations of paragraphs 1 through 20
14 above as if fully set forth herein.

15 26. Defendants have infringed and continue to infringe, literally and/or under
16 the doctrine of equivalents, one or more claims of the 480 Patent, directly and/or
17 indirectly, in violation of 35 U.S.C. § 271(a), (b), (c) and/or (f); at least by making,
18 using, selling, offering to sell and/or importing products in the United States (and/or
19 contributing to or inducing others to do the same), including but not limited to the
20 “SoC” multimedia processors.

21 27. By reason of the acts alleged herein, Broadcom has suffered, is suffering,
22 and unless restrained by the Court, will continue to suffer injury to its business and
23 property rights, for which it is entitled to damages pursuant to 35 U.S.C. § 284 in an
24 amount to be proven at trial.

25 28. By reason of the acts alleged herein, Broadcom has suffered, is suffering,
26 and unless restrained by the Court, will continue to suffer irreparable harm for which
27 there is no adequate remedy at law, and for which Broadcom is entitled to permanent
28 injunctive relief pursuant to 35 U.S.C. § 283.

COUNT THREE

Infringement of the 497 Patent

29. Plaintiff repeats and re-alleges the allegations of paragraphs 1 through 20 above as if fully set forth herein.

30. Defendants have infringed and continue to infringe, literally and/or under the doctrine of equivalents, one or more claims of the 497 Patent, directly and/or indirectly, in violation of 35 U.S.C. § 271(a), (b), (c) and/or (f); at least by making, using, selling, offering to sell and/or importing products in the United States (and/or contributing to or inducing others to do the same), including but not limited to “SiRFstar III” GPS receivers.

31. By reason of the acts alleged herein, Broadcom has suffered, is suffering, and unless restrained by the Court, will continue to suffer injury to its business and property rights, for which it is entitled to damages pursuant to 35 U.S.C. § 284 in an amount to be proven at trial.

32. By reason of the acts alleged herein, Broadcom has suffered, is suffering, and unless restrained by the Court, will continue to suffer irreparable harm for which there is no adequate remedy at law, and for which Broadcom is entitled to permanent injunctive relief pursuant to 35 U.S.C. § 283.

COUNT FOUR

Infringement of the 127 Patent

33. Plaintiff repeats and re-alleges the allegations of paragraphs 1 through 20 above as if fully set forth herein.

34. Defendants have infringed and continue to infringe, literally and/or under the doctrine of equivalents, one or more claims of the 127 Patent, directly and/or indirectly, in violation of 35 U.S.C. § 271(a), (b), (c) and/or (f); at least by making, using, selling, offering to sell and/or importing products in the United States (and/or contributing to or inducing others to do the same), including but not limited to “SiRFstar III” and “SiRFstar IV” GPS receivers, and the SoC multimedia processors.

1 42. Upon information and belief, Defendants have conveyed, via promotional
2 materials, oral communications or otherwise, false and/or misleading information
3 regarding the technical capabilities of Defendants' Accused Products. For example,
4 the Product Overview for SiRFstarIII GSD3t chip (attached as Exhibit E), states that
5 the tracking sensitivity of the GSD3t chip is "-160dBm." Upon information and belief,
6 this information is false.

7 43. Upon information and belief, Defendants have disseminated false and/or
8 misleading statements and information to potential customers for the purpose of
9 promoting the purchase and use of Defendants' Accused Products.

10 44. Upon information and belief, these false and/or misleading statements
11 have been and are material to customers in selecting which chip to purchase for their
12 GPS needs.

13 45. Upon information and belief, the false and/or misleading statements and
14 information disseminated by Defendants has actually deceived and/or has the tendency
15 to deceive a substantial number of potential customers.

16 46. Upon information and belief, the deception caused by these unlawful acts
17 was material in that it was likely to influence the purchasing decision of potential
18 customers, to Plaintiff's detriment.

19 47. Upon information and belief, the false and/or misleading statements and
20 information disseminated by Defendants has had and continues to have an effect on
21 interstate commerce.

22 48. As a direct competitor of Defendants, Broadcom has been and is likely to
23 continue to be injured as the result of the false and/or misleading statements and
24 information disseminated by SiRF. For example, Broadcom has likely lost sales of its
25 competing chips as a result of SiRF's false and/or misleading advertising.

26 49. The false and/or misleading statements and information disseminated by
27 Defendants constitute violations of Section 43(a) of the Lanham Act (15 U.S.C. §
28 1125(a)).

COUNT SEVEN

False or Misleading Advertising in Violation of California Business and Professions Code Section 17500 *et seq.*

59. Plaintiffs restate and incorporate herein by reference Paragraphs 1-58 as though fully set forth herein.

60. Upon information and belief, Defendants have conveyed, via promotional materials, oral communications or otherwise, untrue and/or misleading information regarding the technical capabilities of the Accused Products.

61. Upon information and belief, Defendants knew, or which by the exercise of reasonable care should have known, or failed to investigate so as not to know, that these promotional materials contained untrue and/or misleading statements.

62. Upon information and belief, Defendants' untrue and/or misleading statements likely deceived the public about the technical capabilities of Defendants' Accused Products.

63. The wrongful conduct of Defendants has caused and will continue to cause Plaintiff substantial injury, including but not limited to lost sales of Plaintiff's competing chips.

64. The wrongful conduct of Defendants constitutes unfair competition in violation of California Business and Professional Code Section 17500 *et seq.*

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Broadcom requests that the Court enter a judgment in its favor and against SiRF as follows:

- a. Declare that Defendants have infringed one or more claims of the following United States Patents: 7,310,104; 6,501,480; 6,747,497; and 5,524,127;
- b. Enter a preliminary and permanent injunction prohibiting Defendants, their subsidiaries, divisions, agents, servants,

1 employees, and those in privity with them from infringing,
2 contributing to the infringement of, and inducing infringement of
3 the patents in suit, and for further proper injunctive relief;

- 4 c. Find that Defendants' infringement has been willful;
- 5 d. Enter a preliminary and permanent injunction requiring Defendants,
6 its subsidiaries, divisions, agents, servants, employees, and those in
7 privity with them from continuing to disseminate false information
8 regarding the technical capabilities of the Accused Products and to
9 take affirmative steps to retrieve, retract and destroy all previously
10 made, disseminated, published or communicated promotional
11 materials that falsely characterize, whether directly or by
12 implication, Defendants' Accused Products, and to explain in like
13 manner why the material is being retrieved, retracted and
14 destroyed;
- 15 e. Award to Plaintiff damages for Defendants' infringement, with
16 interest;
- 17 f. Award to Plaintiff damages for Defendants' acts of false
18 advertising, with interest, including but not limited to any and all
19 profits derived by Defendants from the sale of Accused Products
20 and accessories, and that such damages be trebled;
- 21 g. Award to Plaintiff all costs (including expert fees), disbursements
22 and reasonable attorneys' fees incurred in this action; and
- 23 h. Grant any such further relief as the Court deems just and proper.
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DEMAND FOR JURY TRIAL

In accordance with Fed. R. Civ. P. 38(b), Plaintiff Broadcom demands a trial by jury on all issues so triable.

Dated: October 13, 2009

By: Gregory C. Schodde



W.
10/13/09

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EXHIBIT A

(12) **United States Patent**
MacInnis et al.

(10) **Patent No.:** US 7,310,104 B2
 (45) **Date of Patent:** *Dec. 18, 2007

(54) **GRAPHICS DISPLAY SYSTEM WITH ANTI-FLUTTER FILTERING AND VERTICAL SCALING FEATURE**
 (75) **Inventors:** Alexander G. MacInnis, Los Altos, CA (US); Chengfuh Jeffrey Tang, Saratoga, CA (US); Xiaodong Xie, San Jose, CA (US); James T. Patterson, Saratoga, CA (US); Greg A. Kranawetter, San Jose, CA (US)

(73) **Assignee:** Broadcom Corporation, Irvine, CA (US)

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) **Appl. No.:** 11/511,042

(22) **Filed:** Aug. 28, 2006

(65) **Prior Publication Data**
 US 2006/0290708 A1 Dec. 28, 2006

Related U.S. Application Data

(63) Continuation of application No. 11/097,028, filed on Apr. 1, 2005, now Pat. No. 7,098,930, which is a continuation of application No. 10/842,743, filed on May 10, 2004, now Pat. No. 6,879,330, which is a continuation of application No. 09/437,327, filed on Nov. 9, 1999, now Pat. No. 6,738,072.

(60) Provisional application No. 60/107,875, filed on Nov. 9, 1998.

(51) **Int. Cl.**
 G09G 5/00 (2006.01)
 H04N 7/01 (2006.01)
 G06F 3/38 (2006.01)
 G09G 5/397 (2006.01)

(52) **U.S. Cl.** 345/629; 345/630; 345/547; 348/441; 348/563

(58) **Field of Classification Search** 345/629-630, 345/611, 592, 547, 545, 660, 554; 348/441, 348/447, 536, 554, 497, 571; 715/781, 798, 715/800; 382/260, 284; 358/540
 See application file for complete search history.

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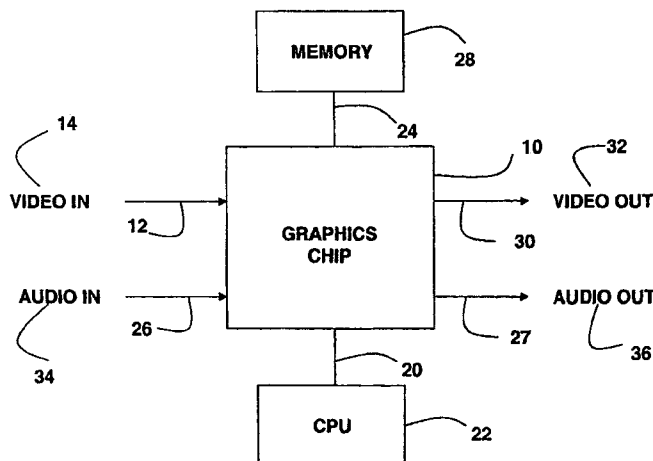
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Primary Examiner—Wesner Sajous
 (74) *Attorney, Agent, or Firm*—McAndrews, Held & Malloy, Ltd.

(57) **ABSTRACT**

A graphics integrated circuit chip is used in a set-top box for controlling a television display. The graphics chip processes analog video input, digital video input, and graphics input. The chip includes a single polyphase filter that preferably provides both anti-flutter filtering and scaling of graphics. Anti-flutter filtering may help reduce display flicker due to the interlaced nature of television displays. The scaling of graphics may be used to convert the normally square pixel aspect ratio of graphics to the normally rectangular pixel aspect ratio of video.

22 Claims, 37 Drawing Sheets



US 7,310,104 B2

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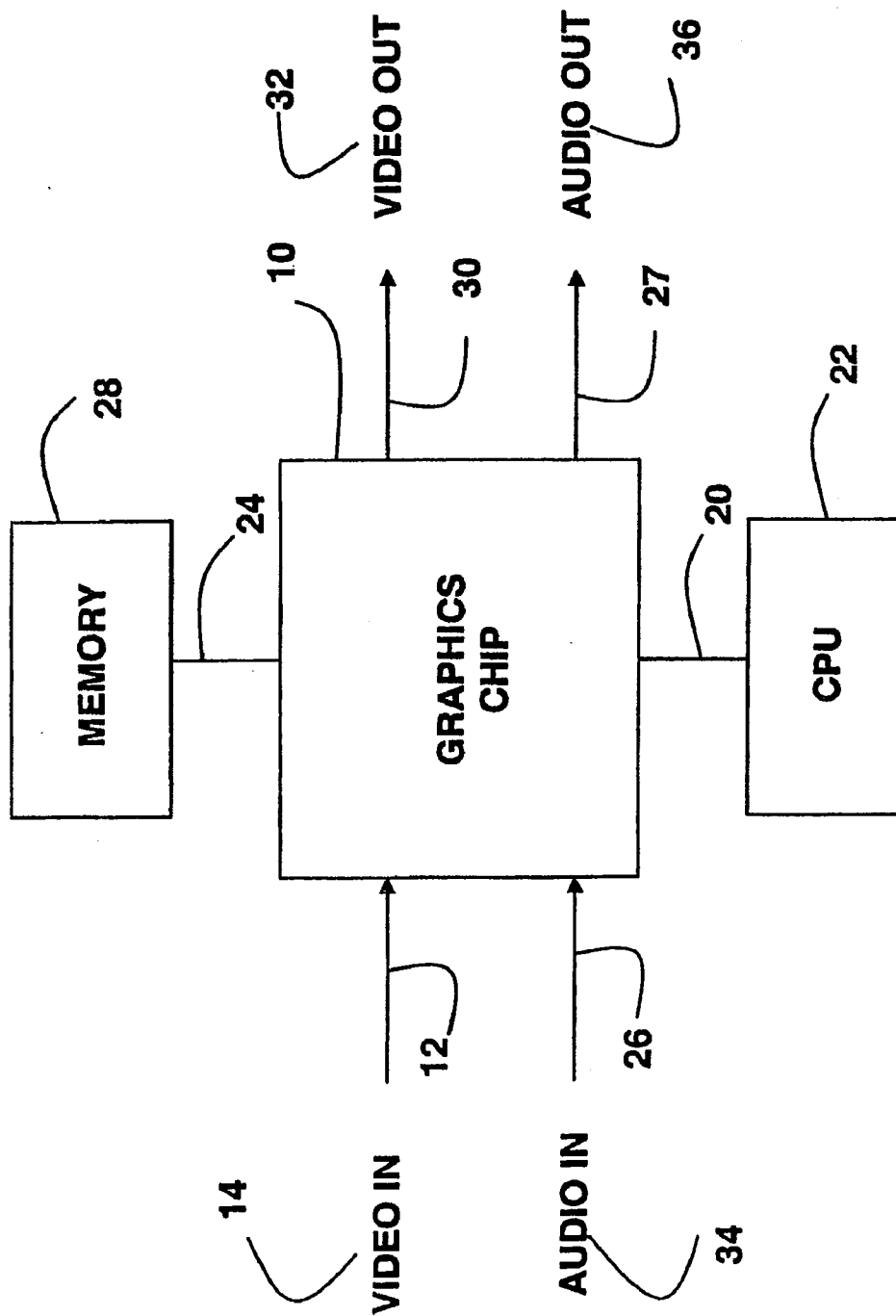


FIG. 1

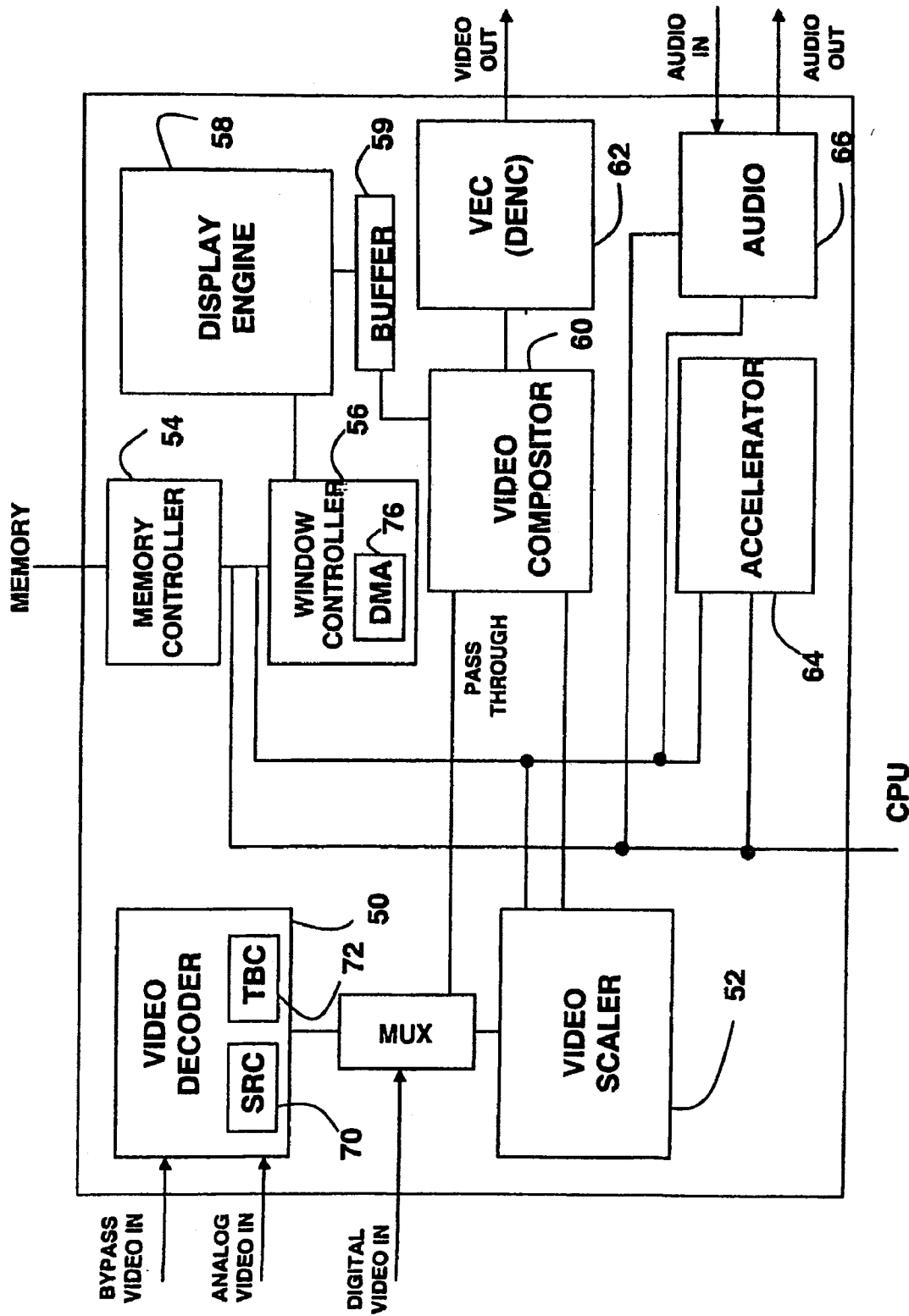


FIG. 2

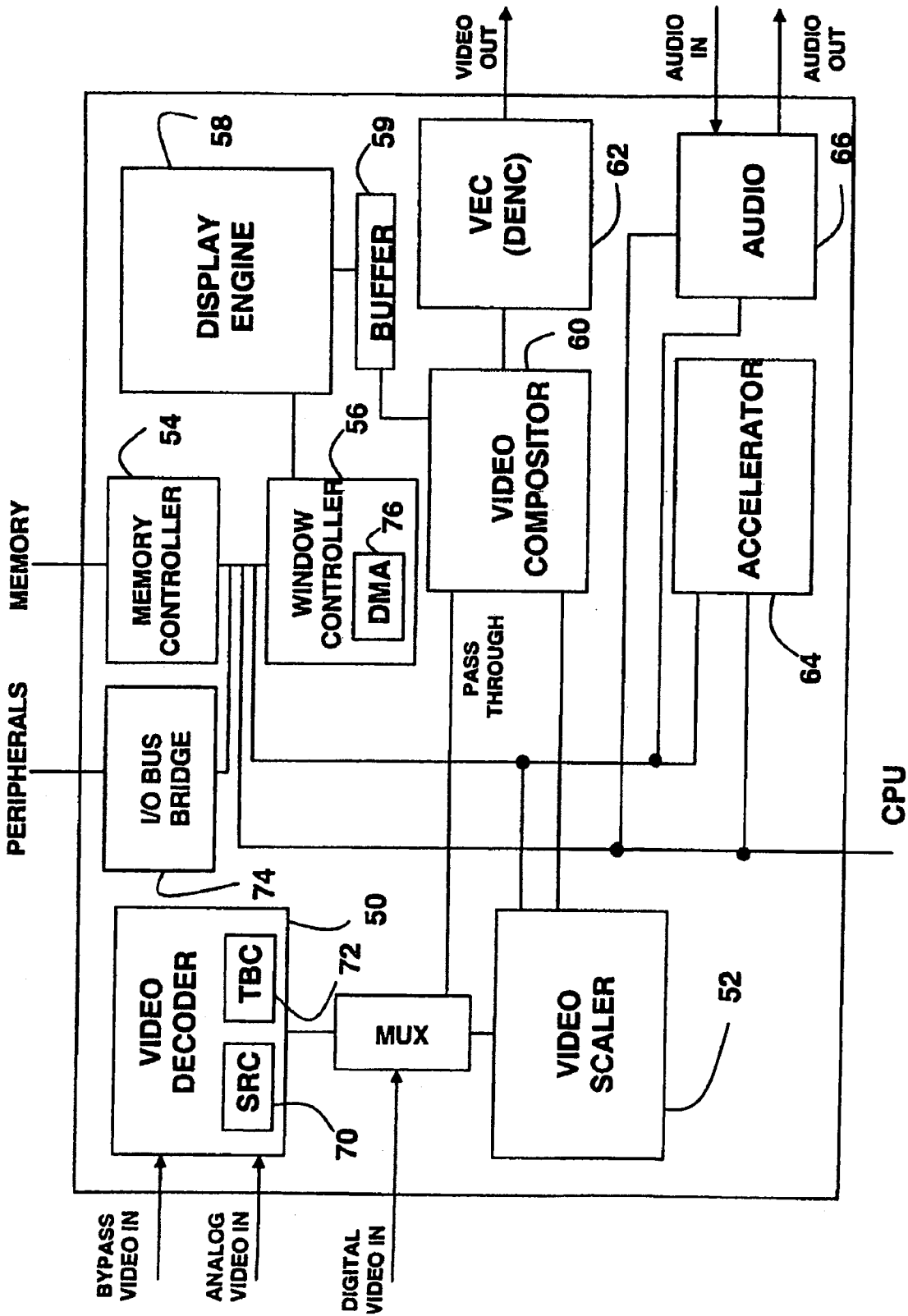


FIG. 3

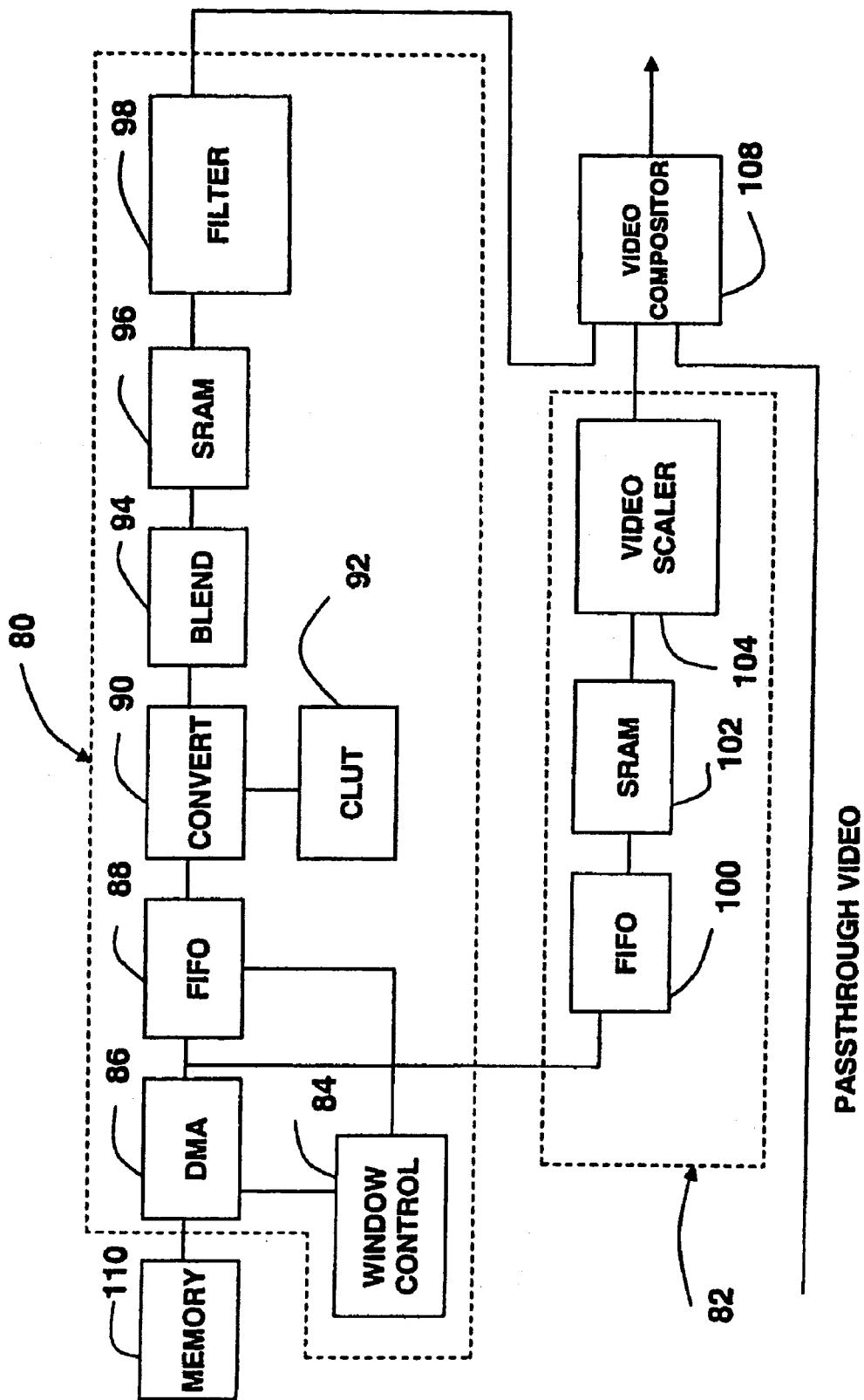


FIG. 4

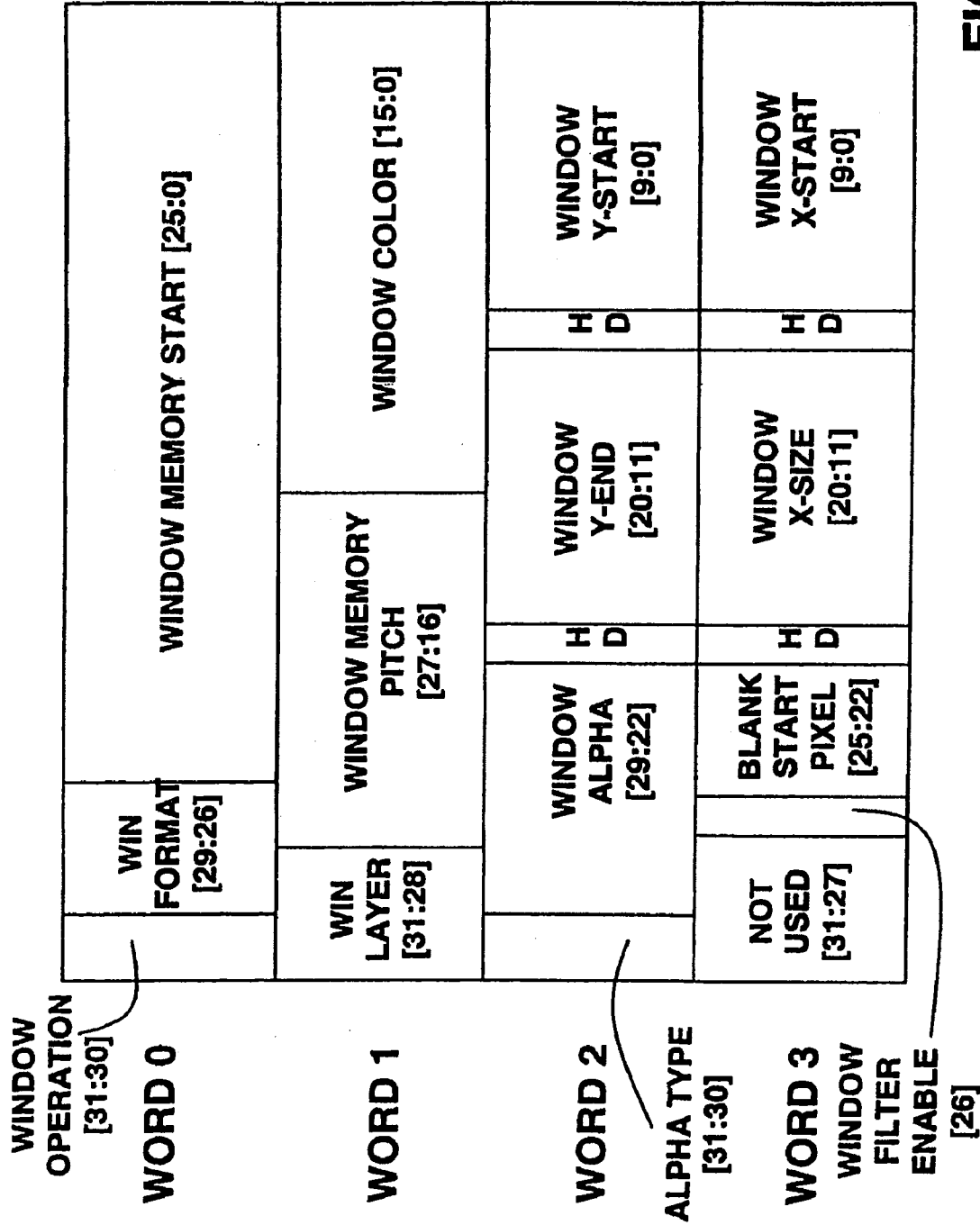
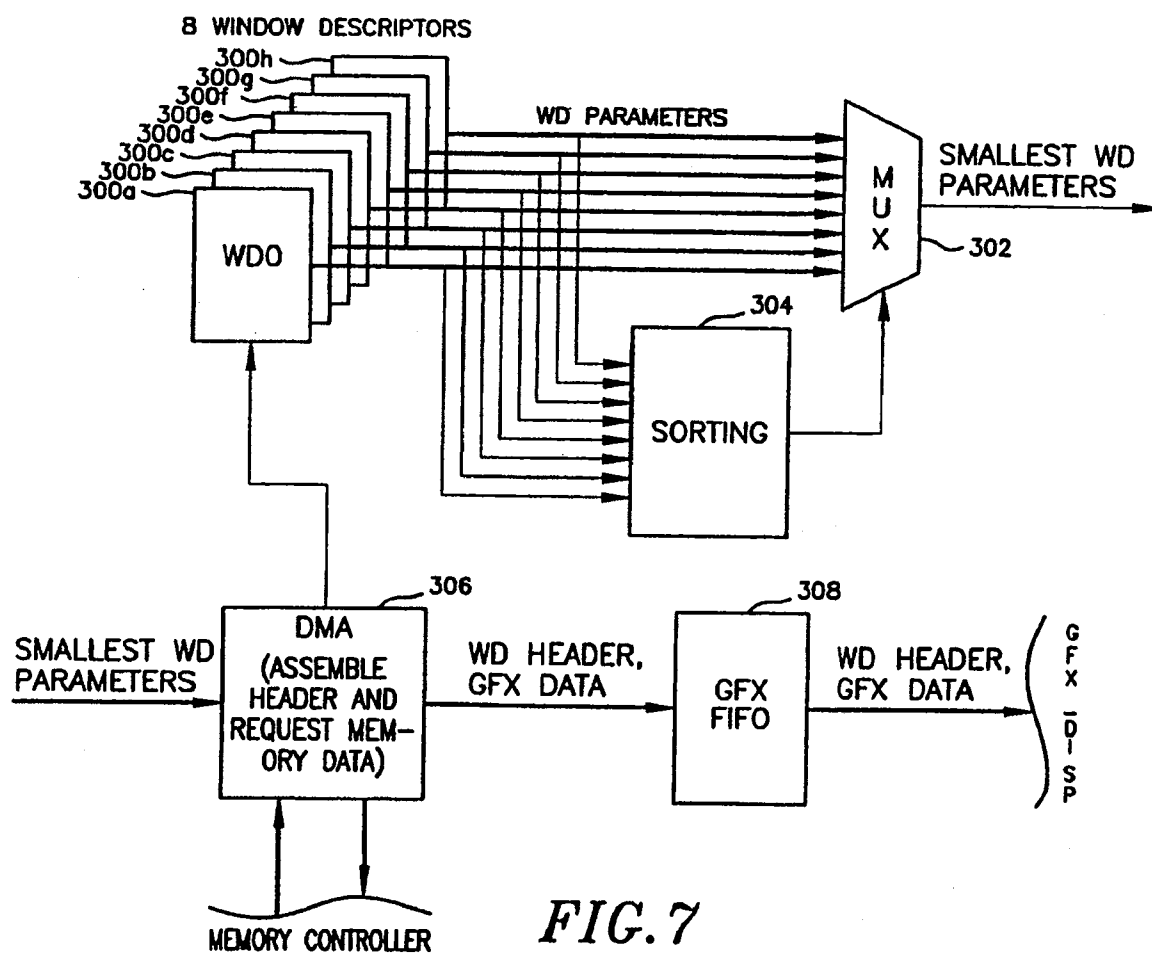


FIG. 6



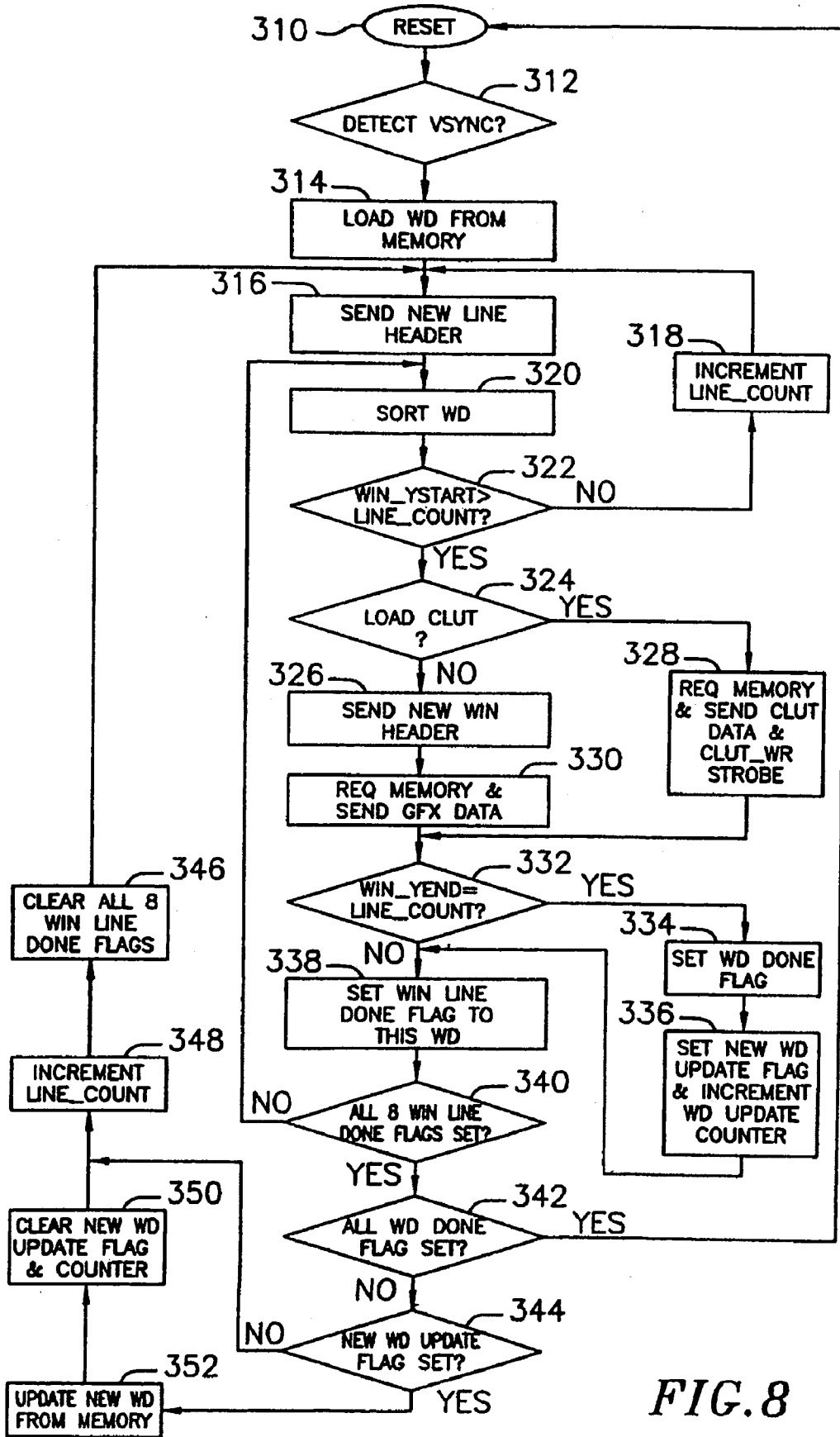


FIG. 8

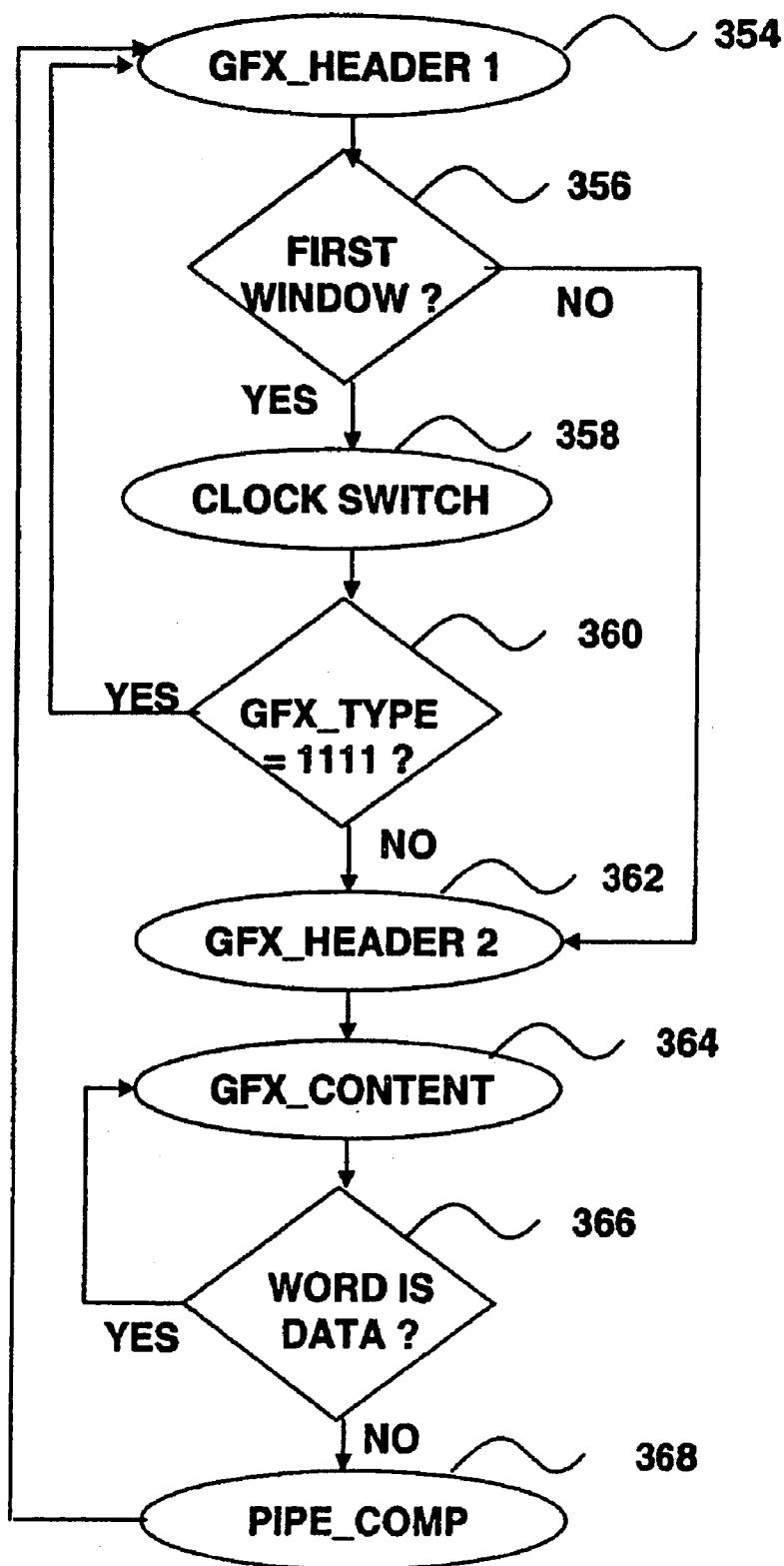


FIG. 9

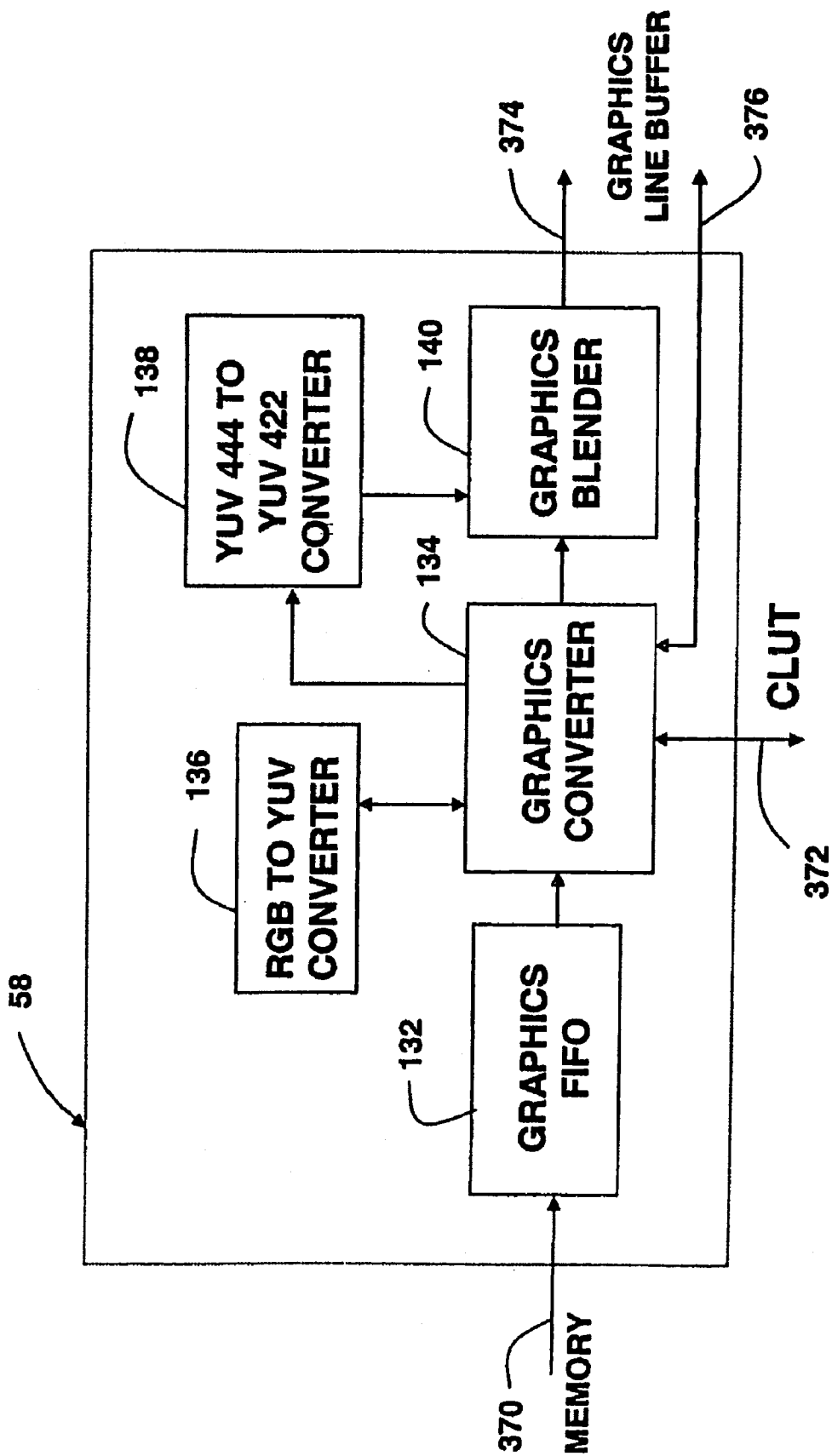


FIG. 10

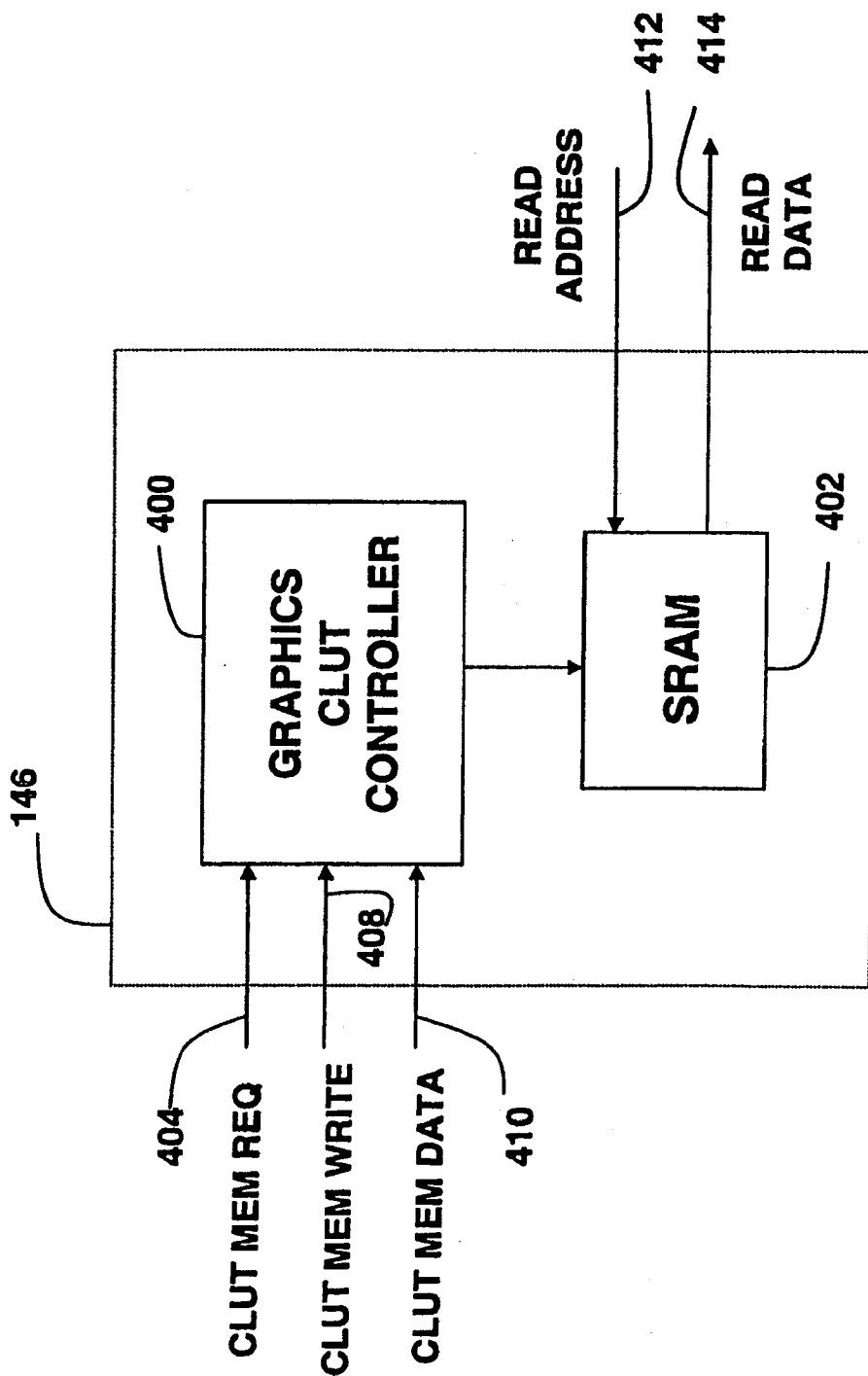


FIG. 11

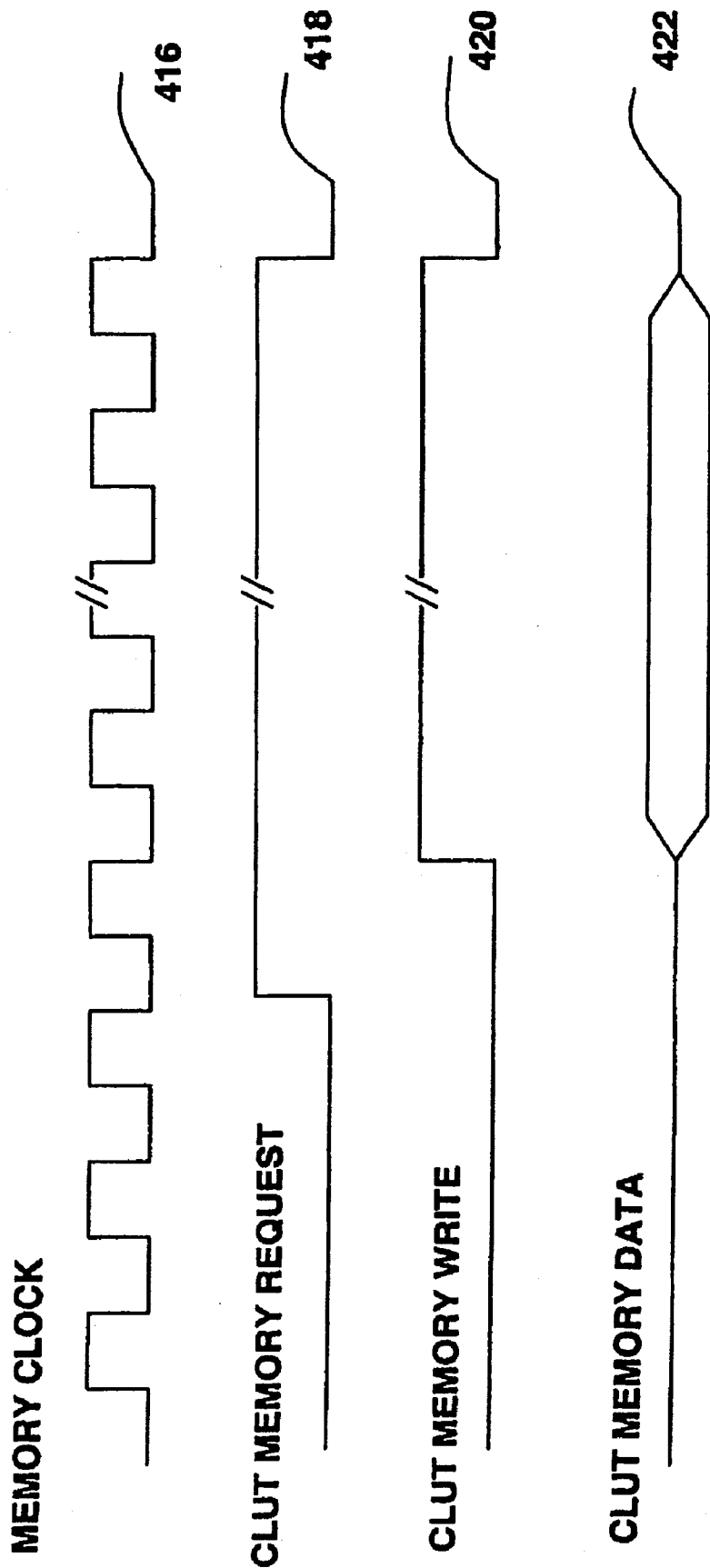


FIG. 12

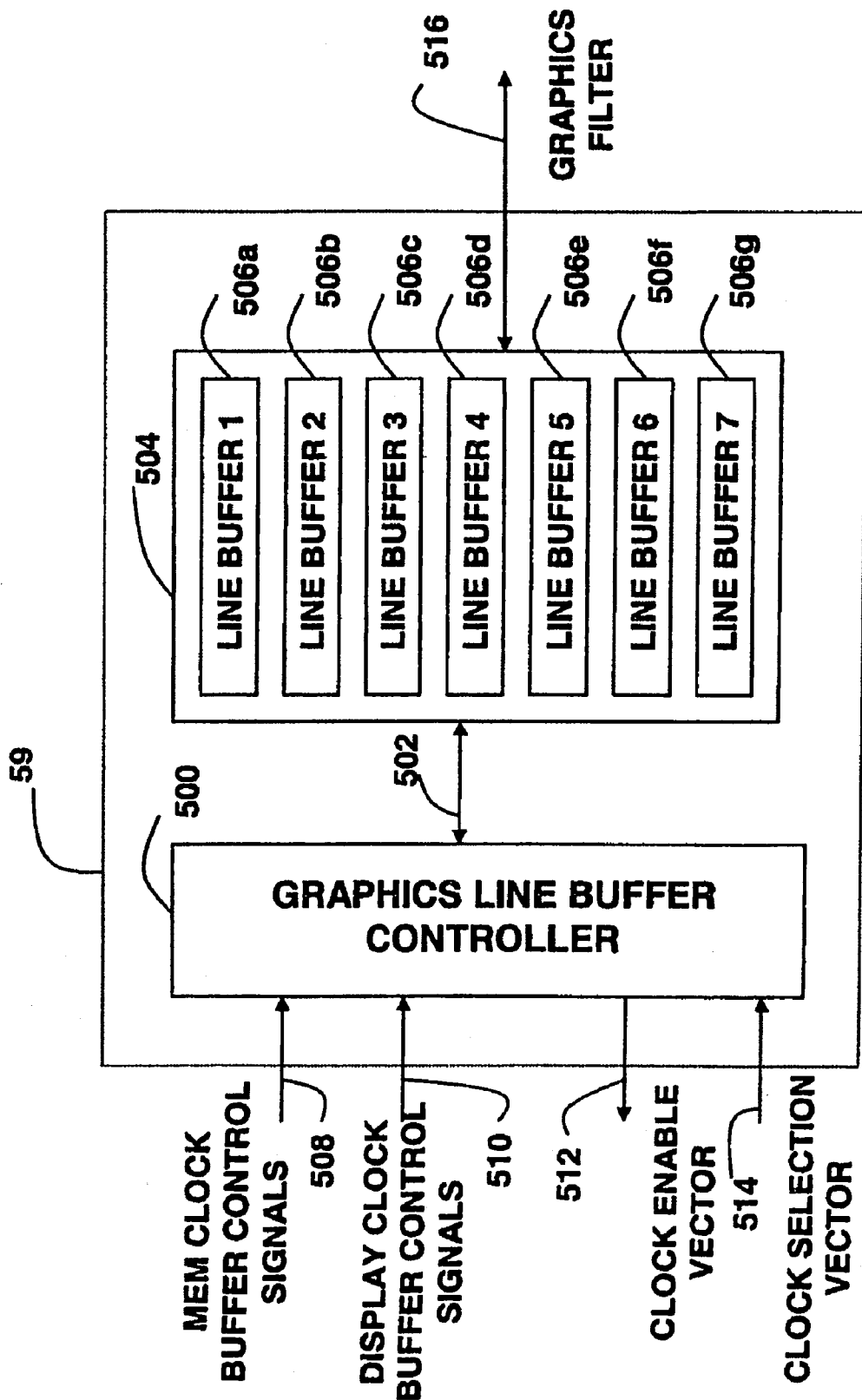


FIG. 13

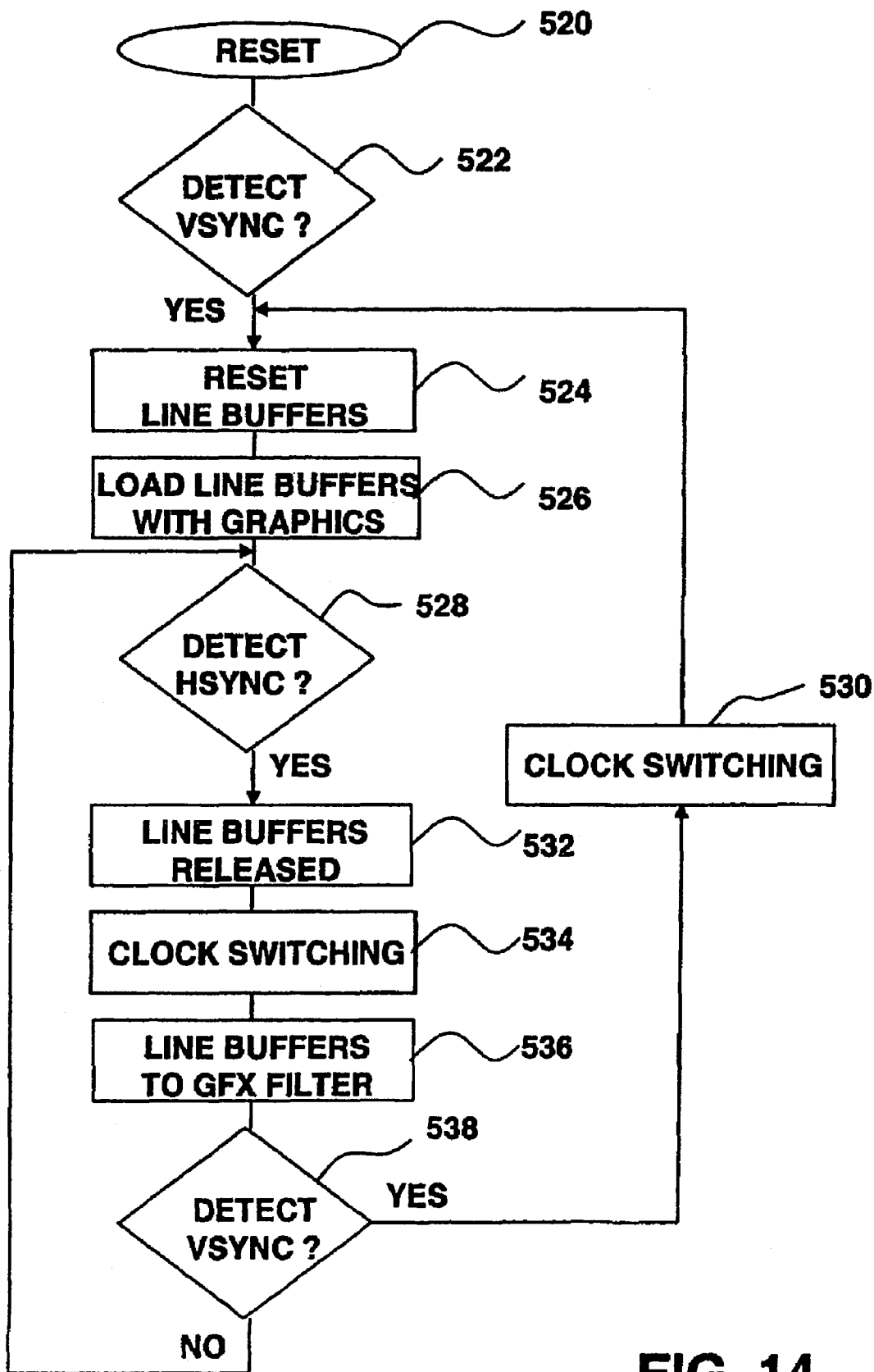
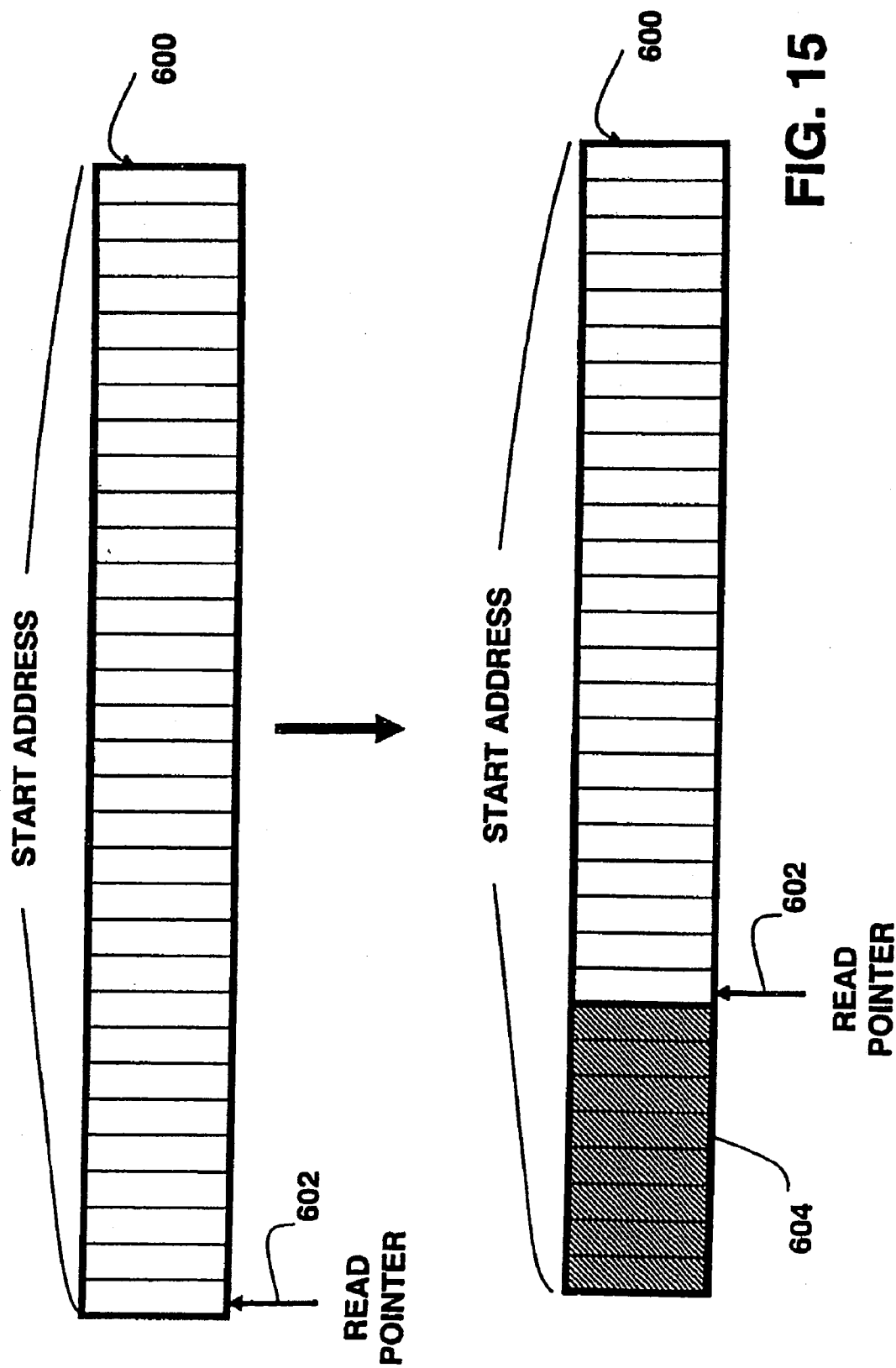


FIG. 14



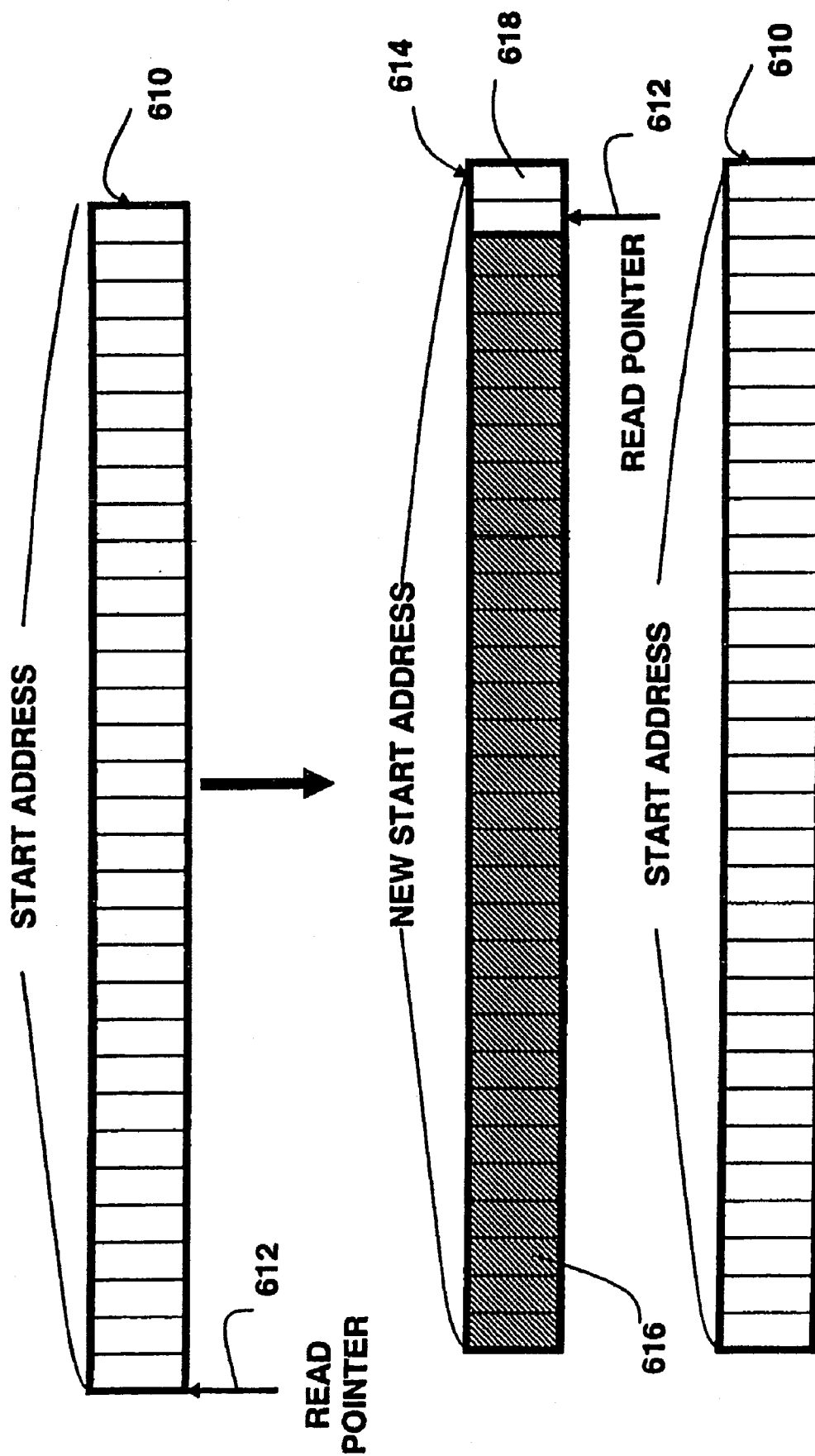


FIG. 16

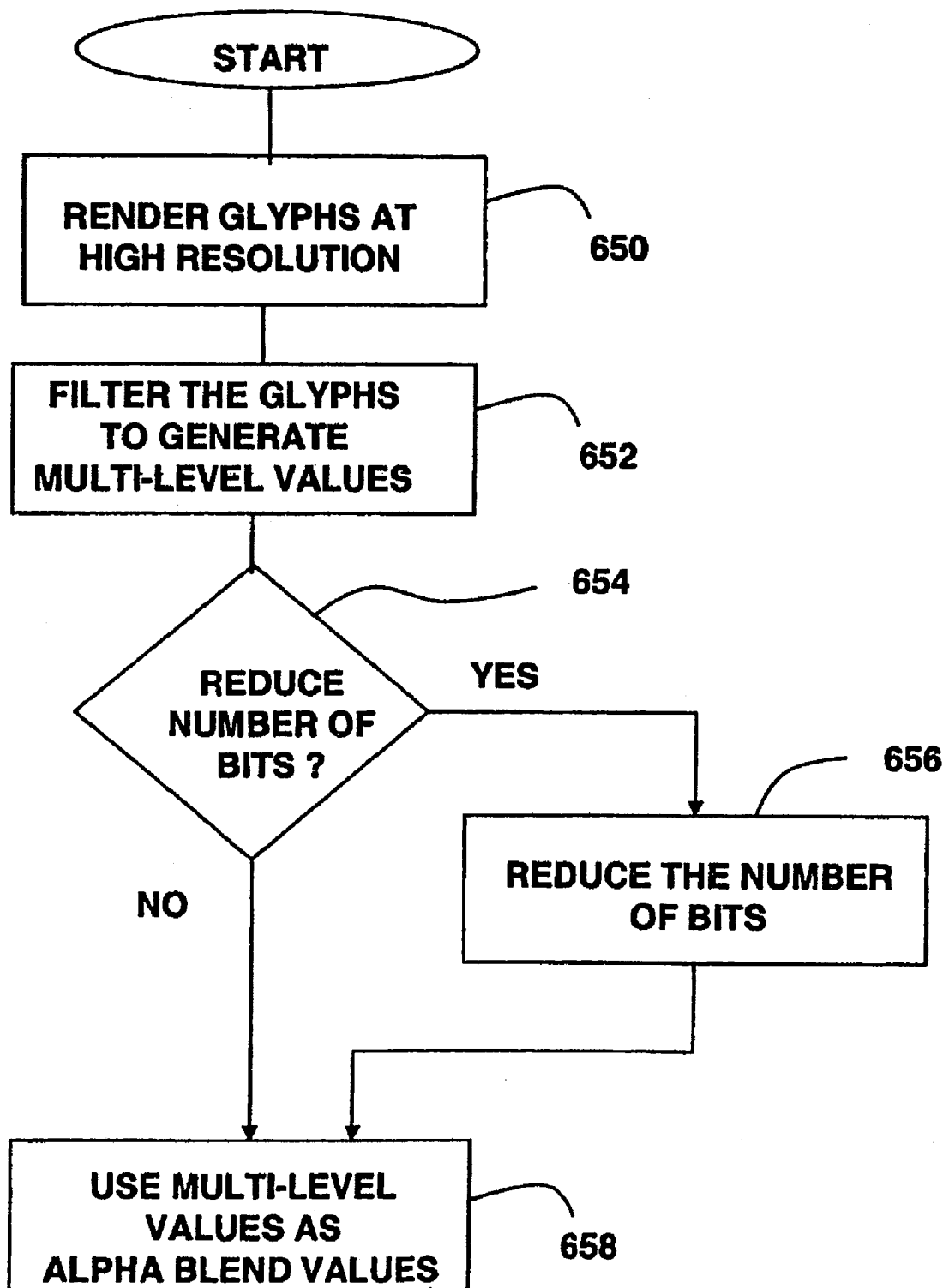


FIG. 17

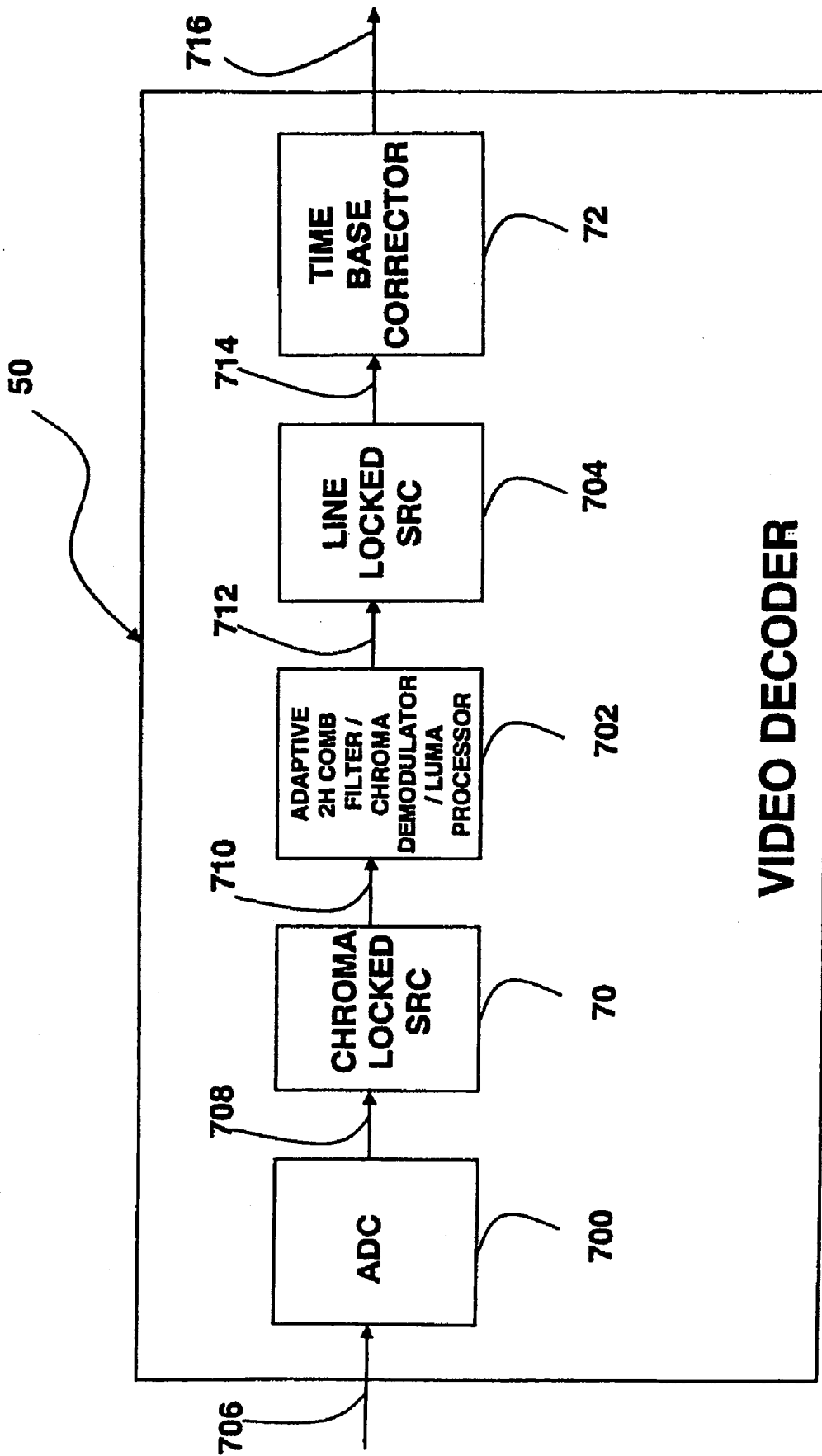


FIG. 18

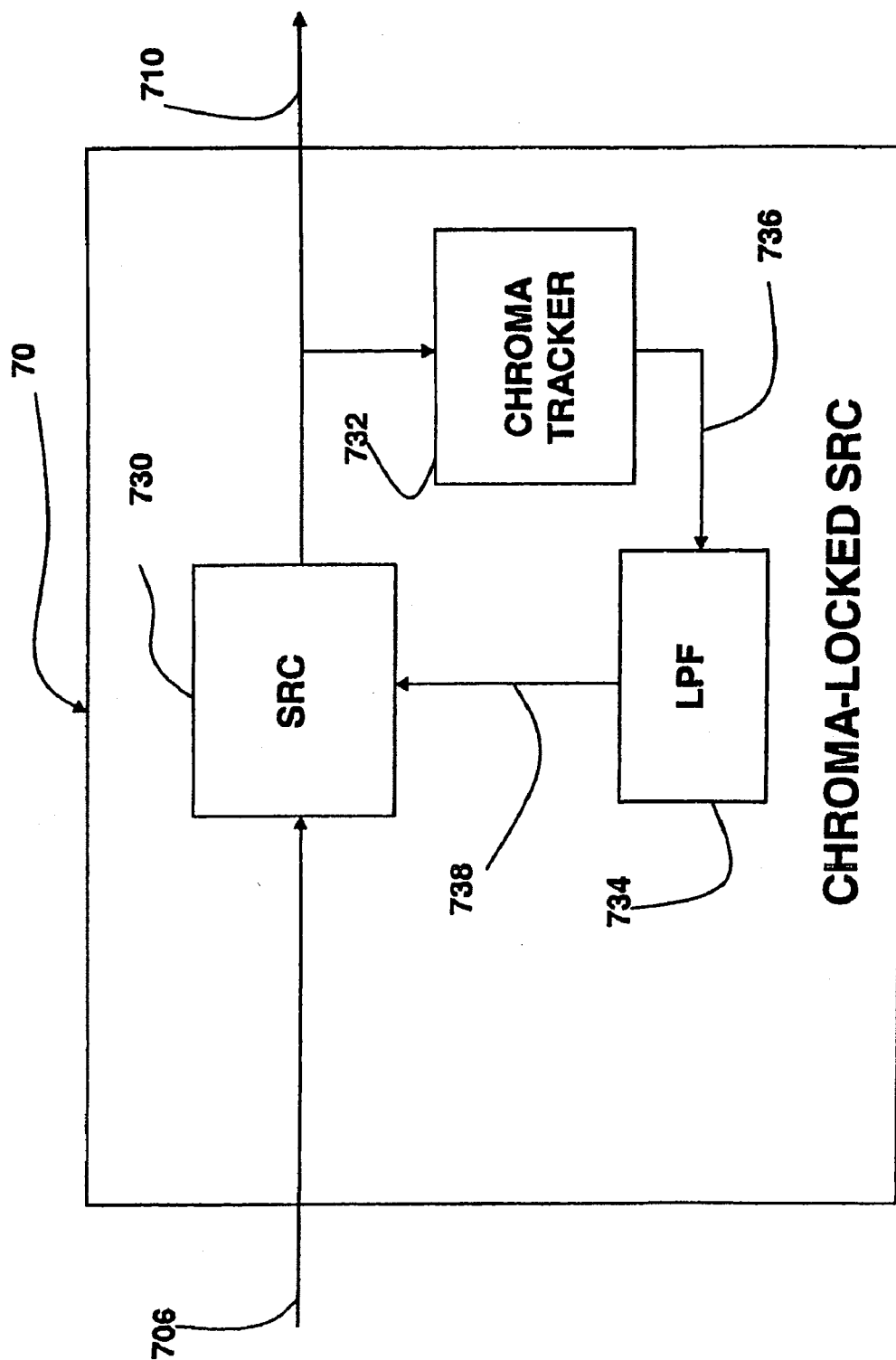


FIG. 19

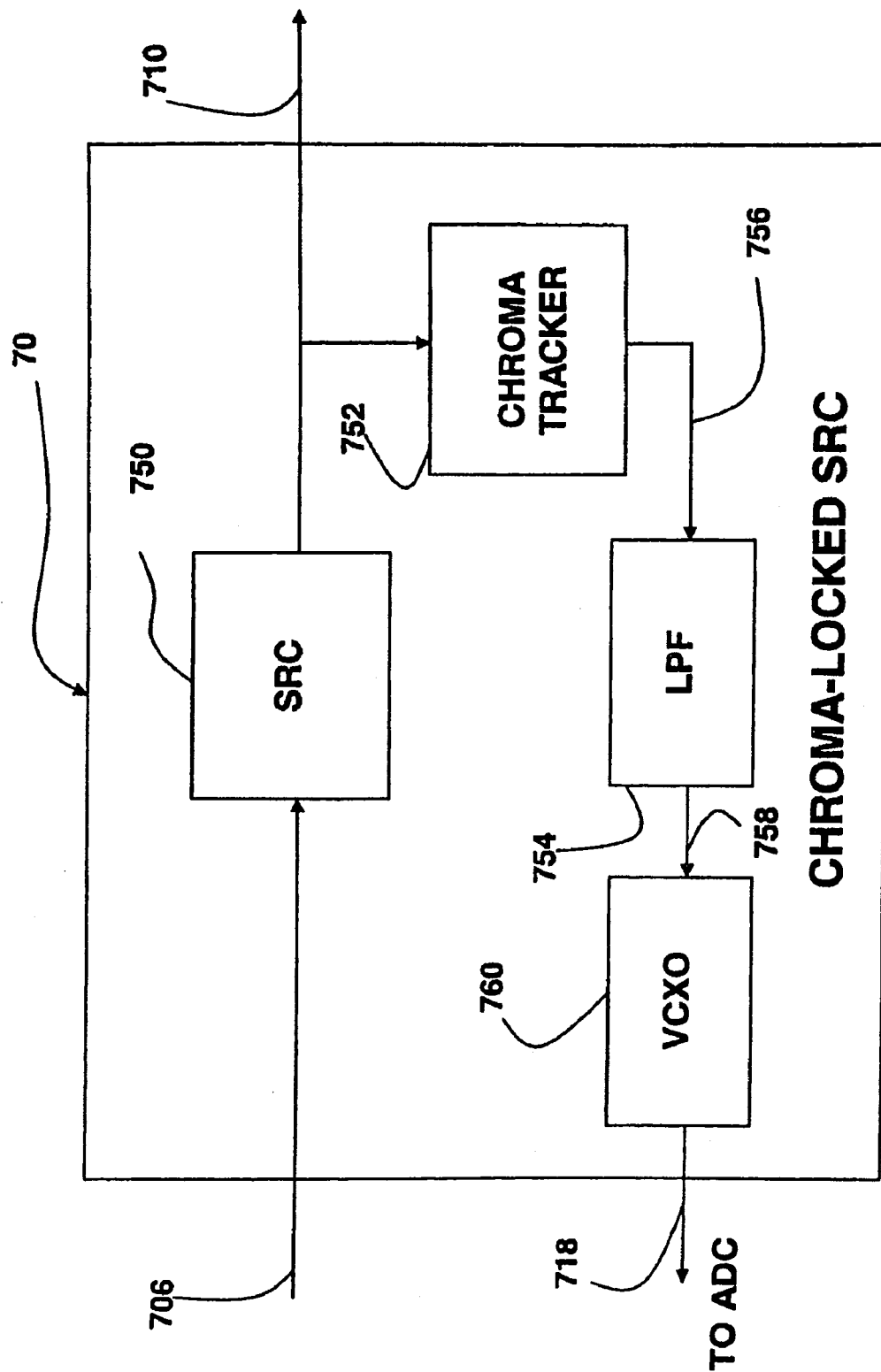


FIG. 20

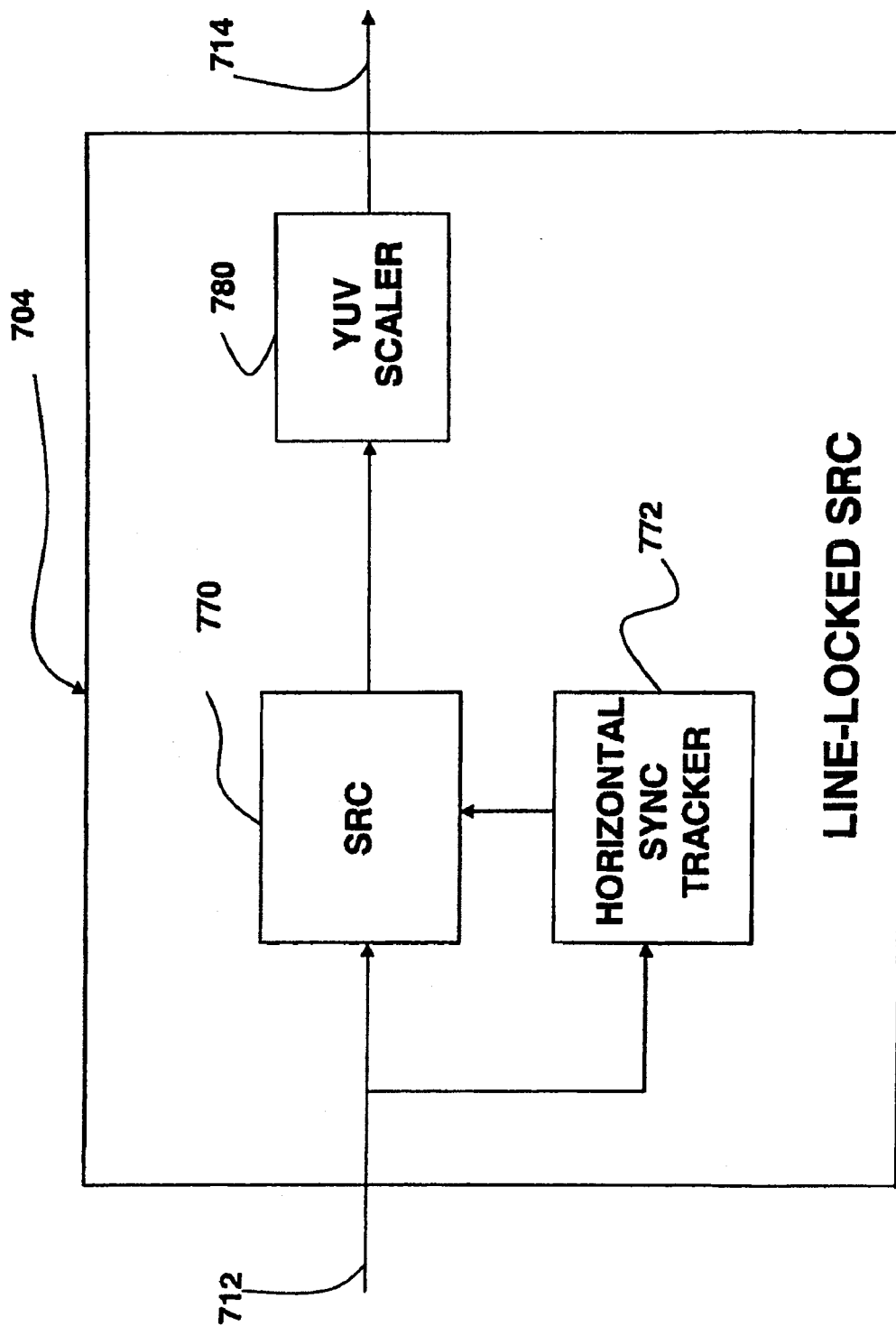


FIG. 21

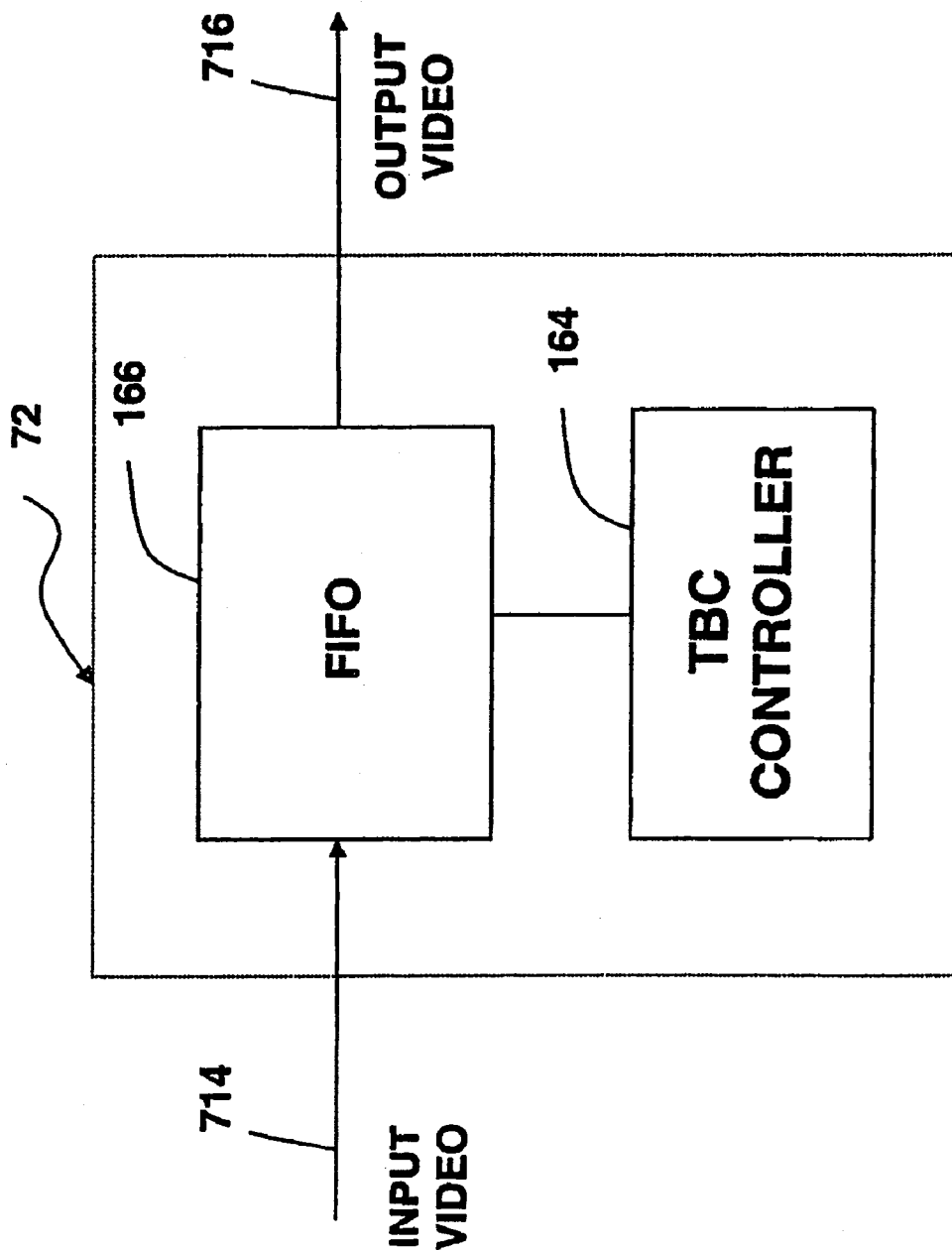


FIG. 22

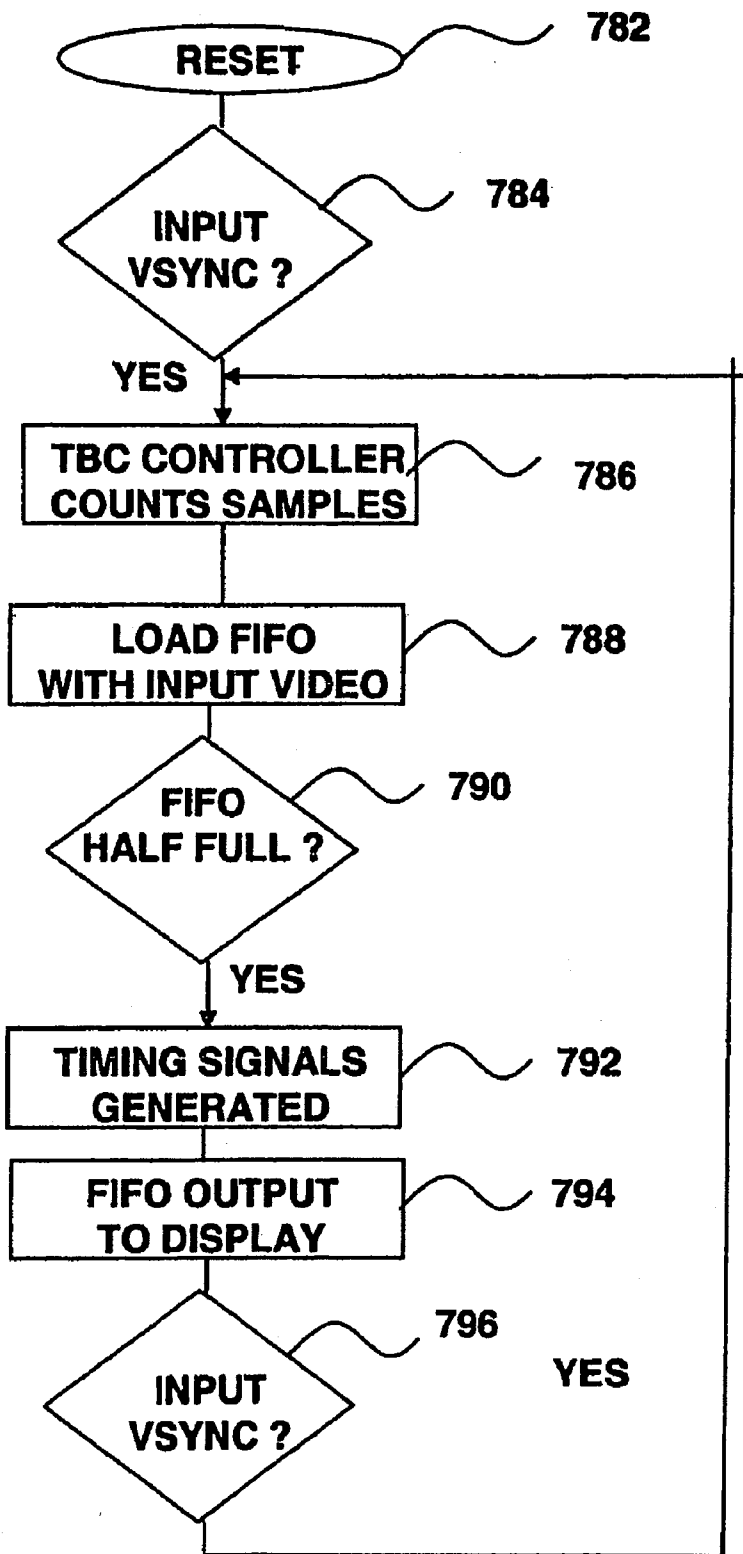


FIG. 23

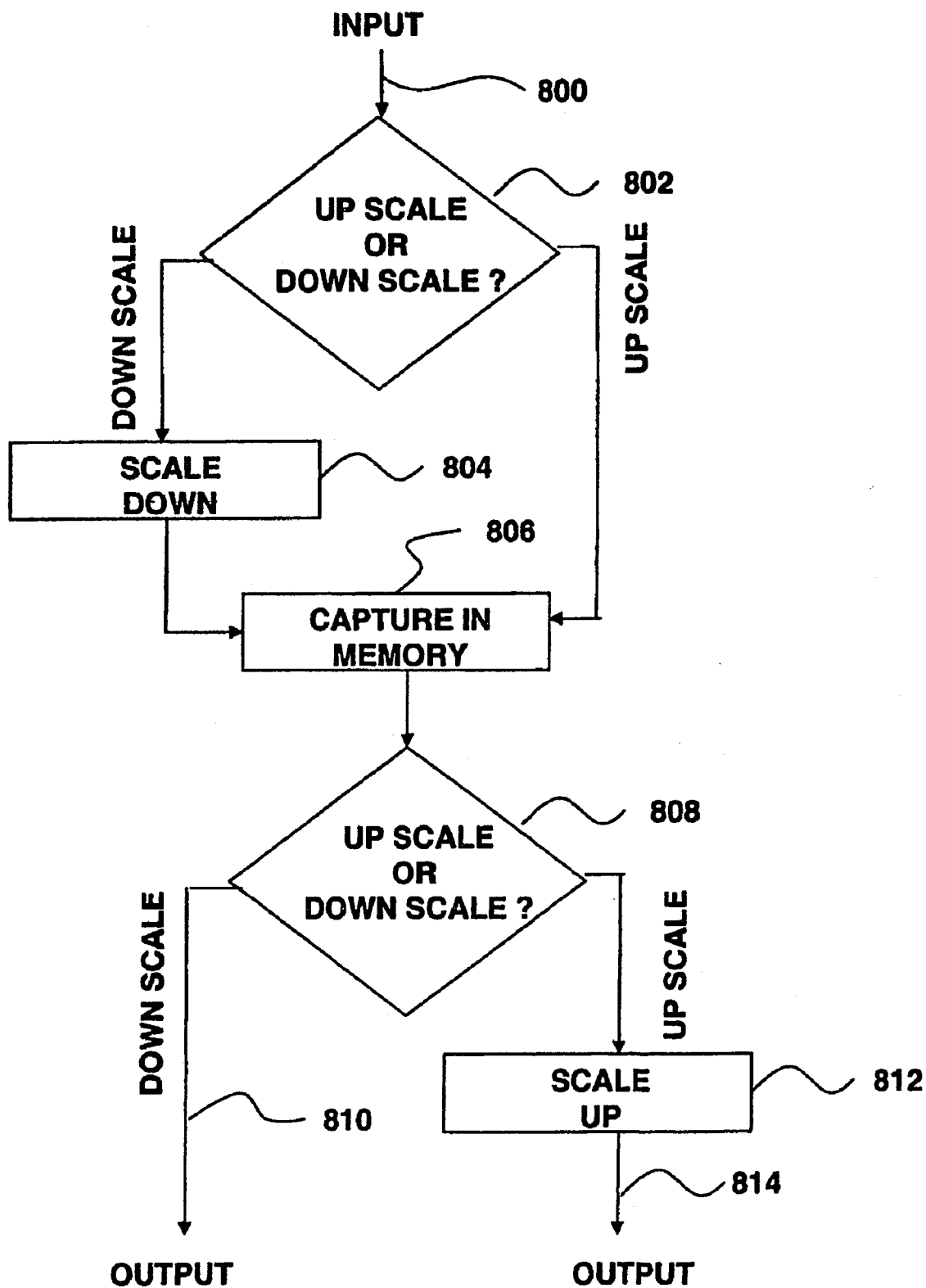


FIG. 24

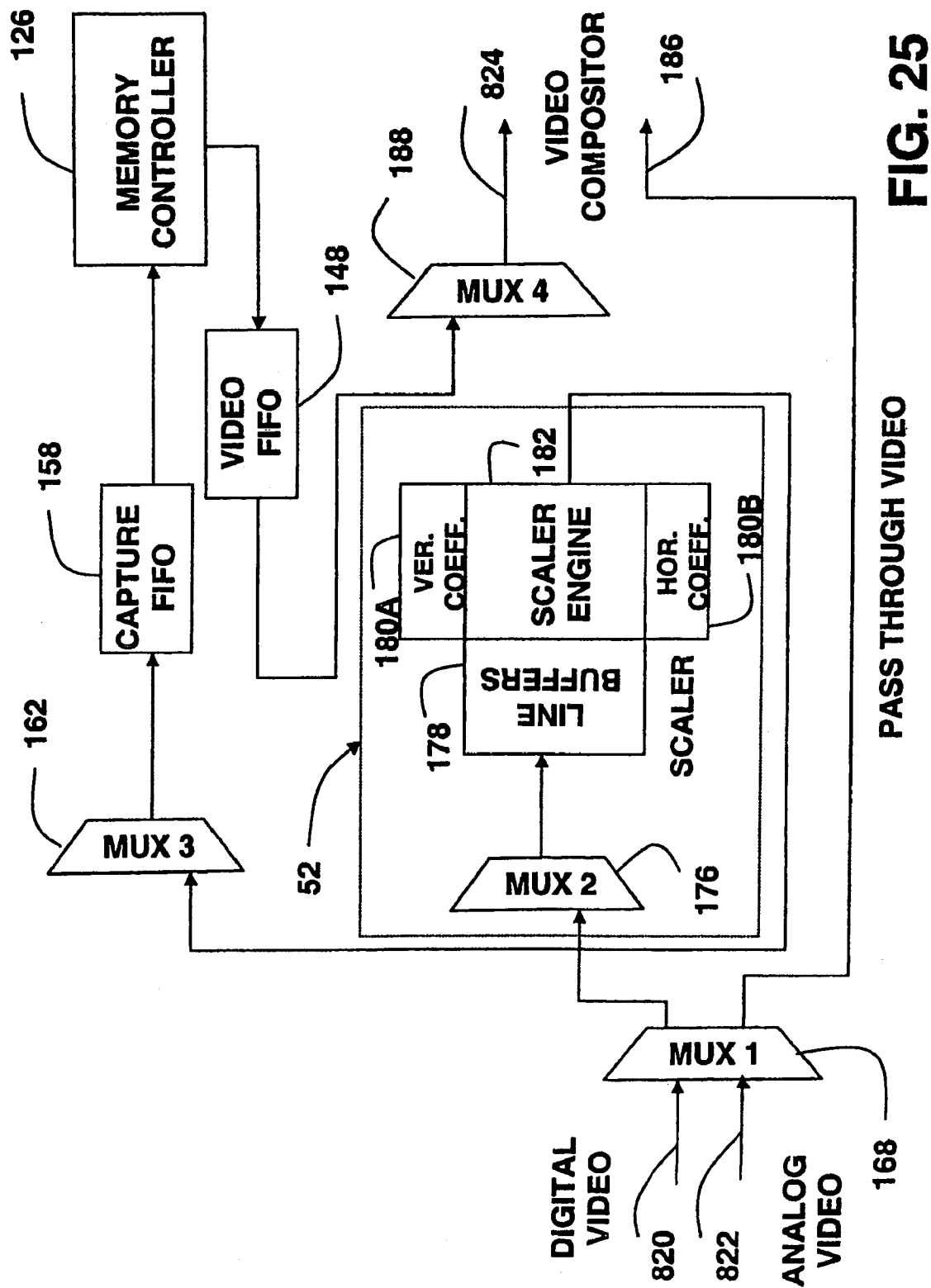


FIG. 25

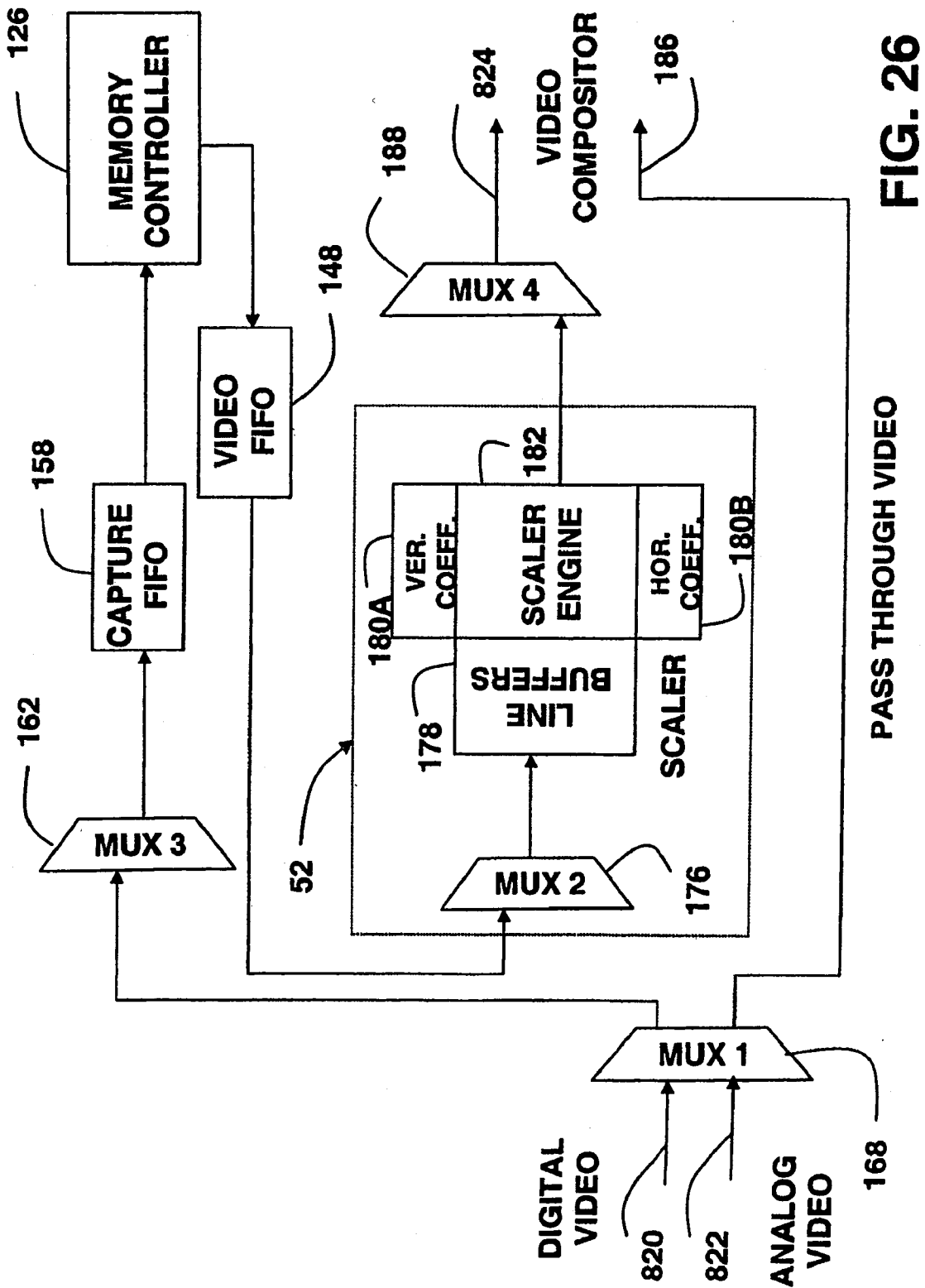


FIG. 26

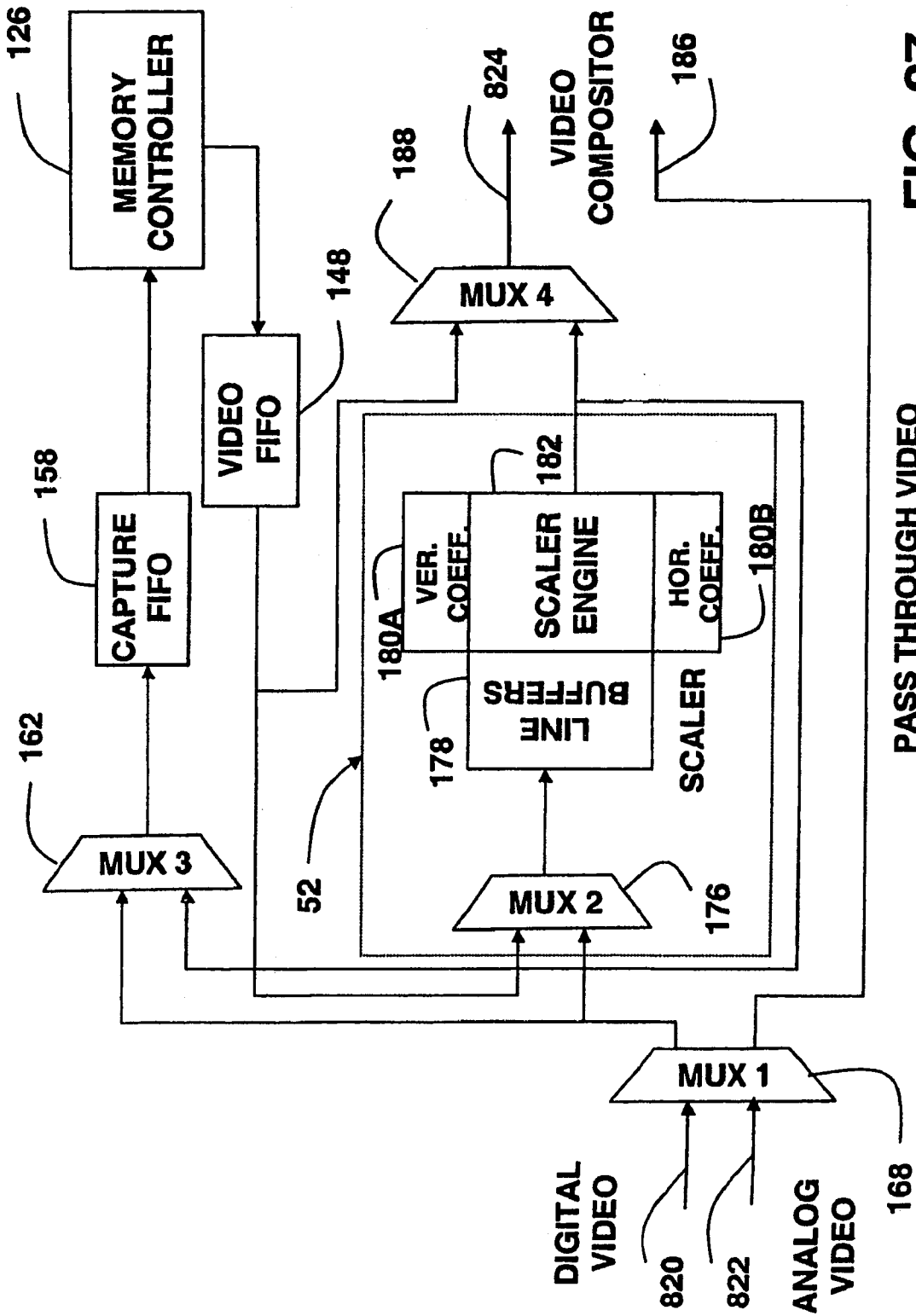


FIG. 27

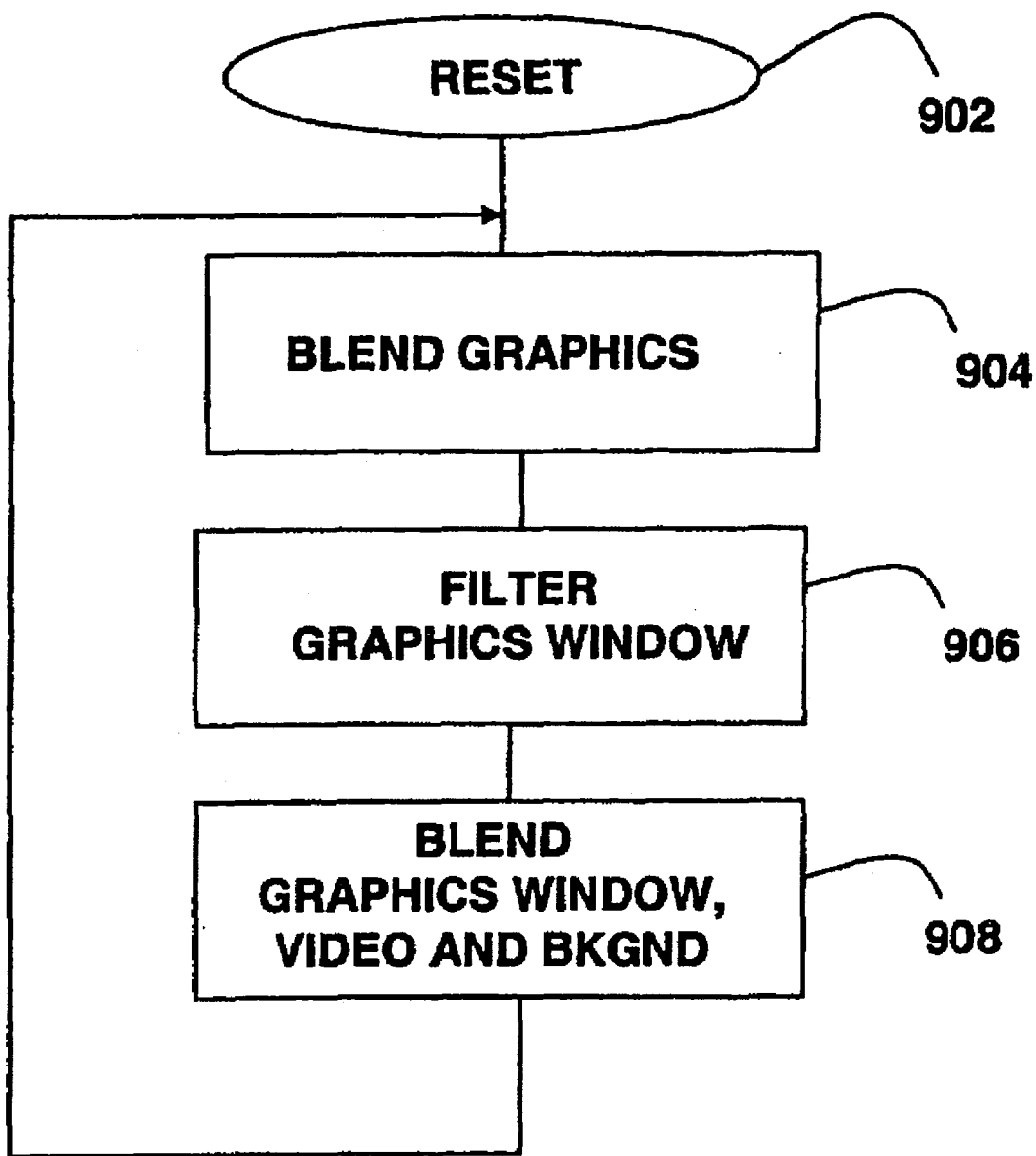


FIG. 28

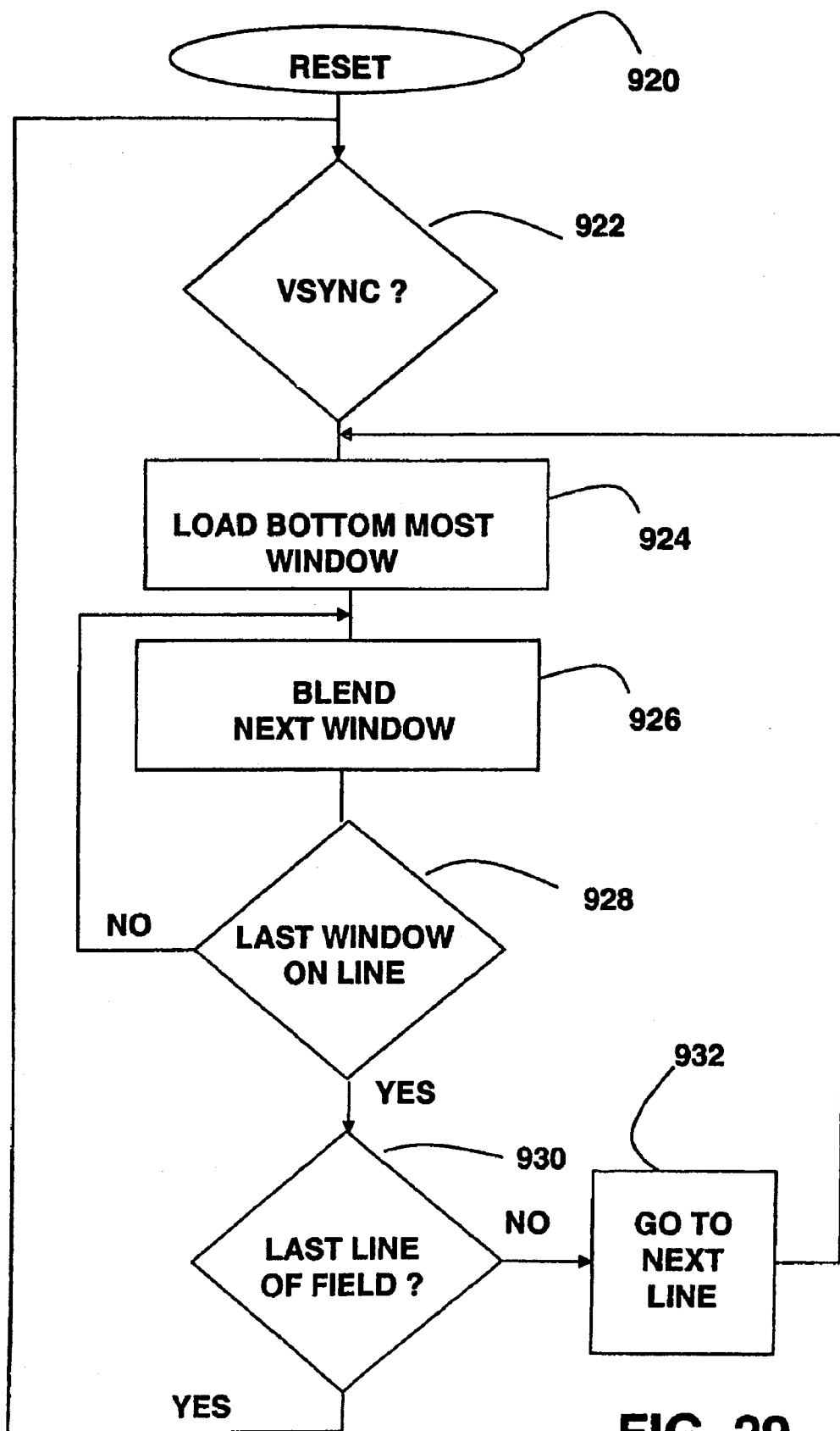


FIG. 29

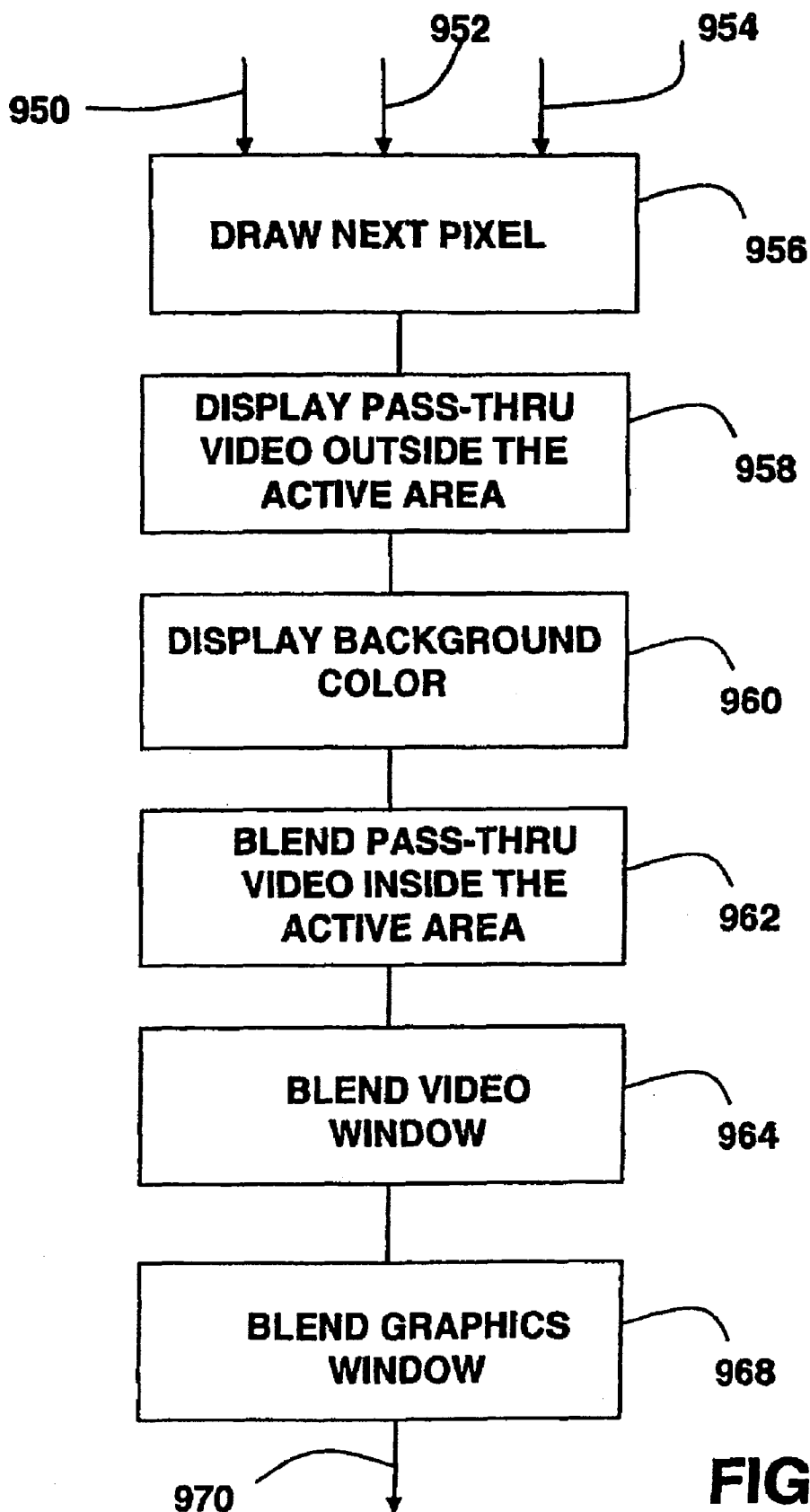


FIG. 30

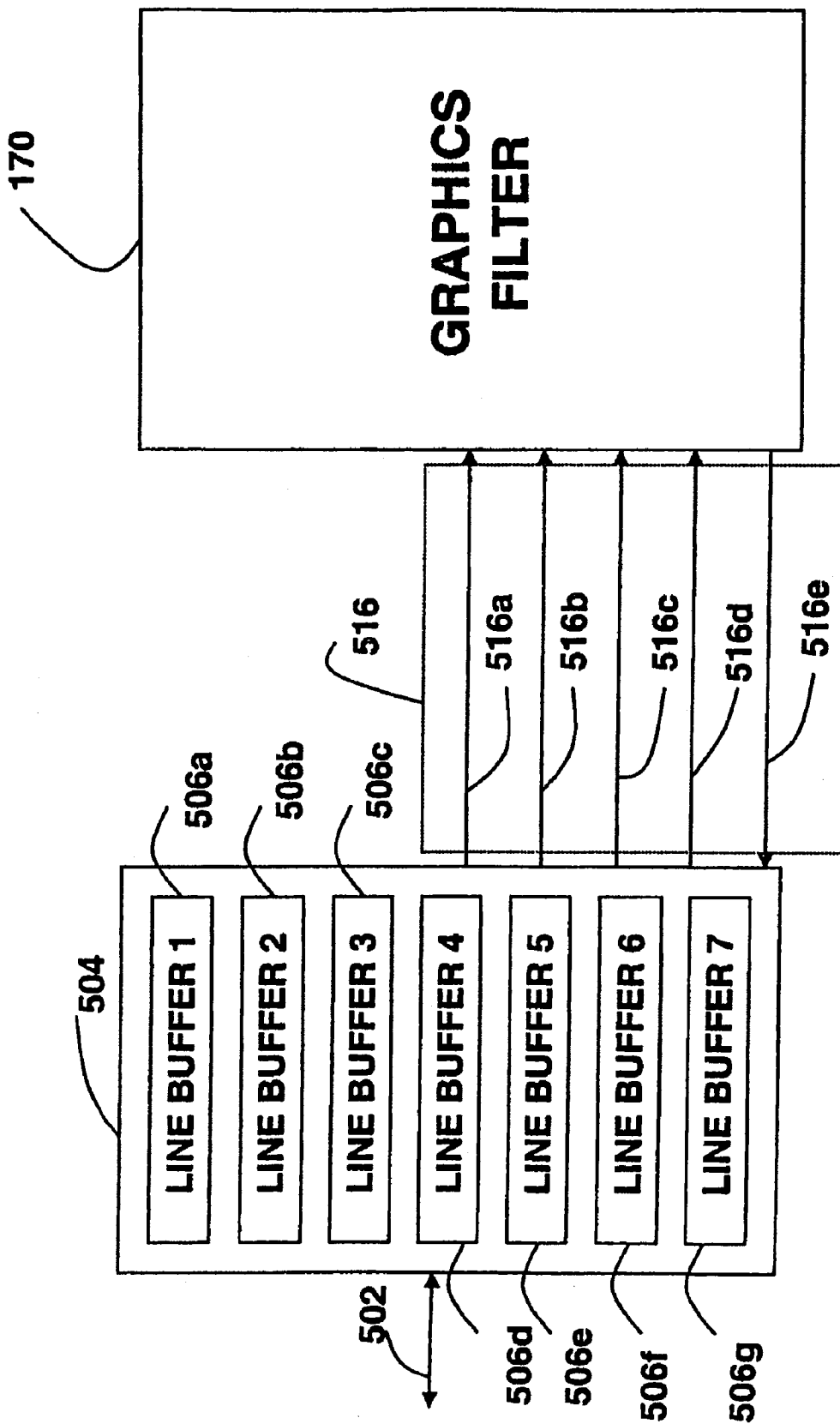


FIG. 31

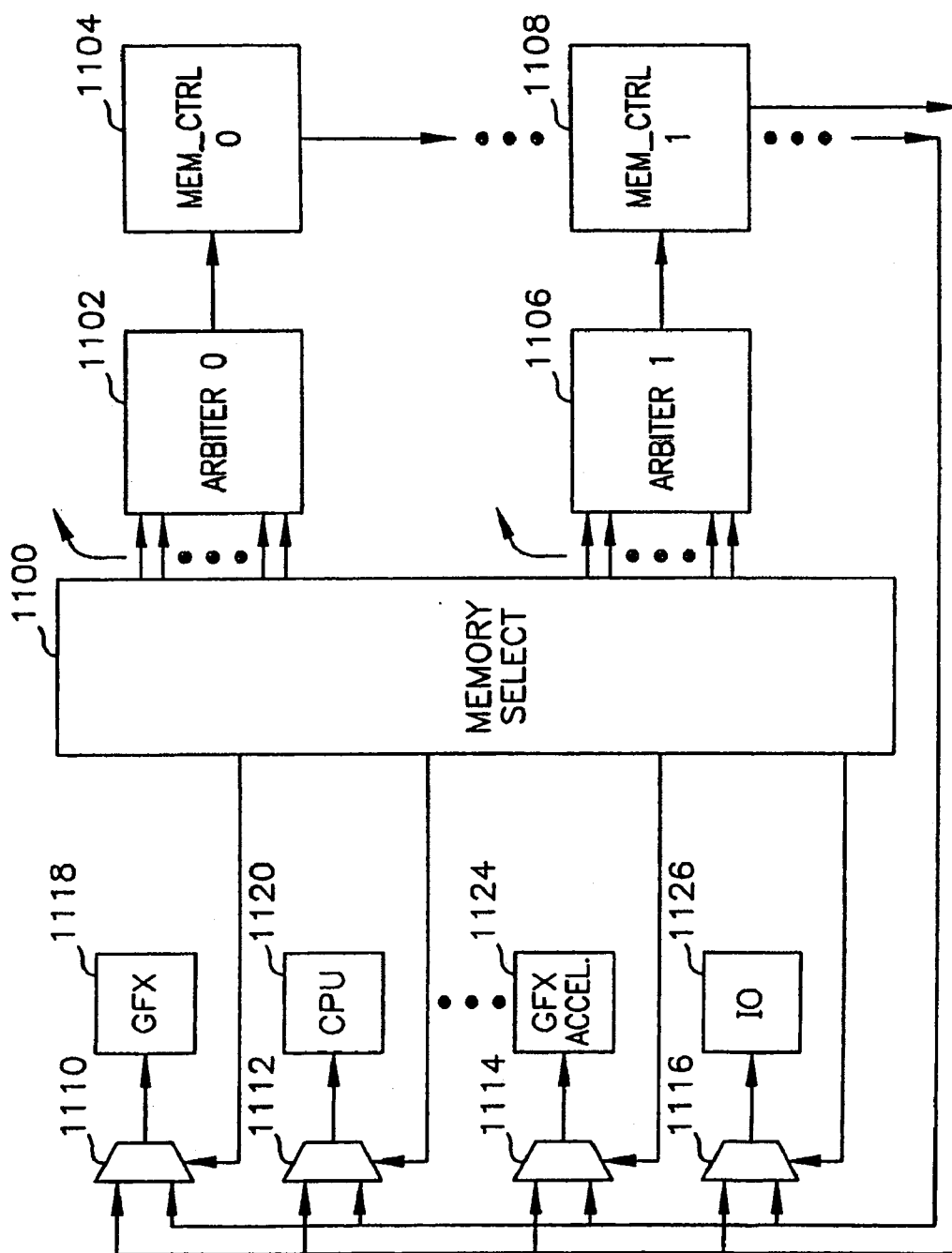


FIG. 32