IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

DIVERSIFIED OBSERVATION LLC	)
	)
Plaintiff,	)
	) Civil Action No. 6:18-cv-00212
v.	)
	) **JURY TRIAL DEMANDED**
XEROX CORPORATION	)
	)
Defendant.	)
	)

COMPLAINT

For its Complaint, Plaintiff Diversified Observation LLC ("Plaintiff" or "Diversified Observation"), by and through the undersigned counsel, alleges on personal knowledge as to its own activities, and on information and belief as to the activities of Xerox Corporation ("Xerox" or "Defendant"), as follows:

THE PARTIES

1. Diversified Observation is a Texas company with a place of business located at 5068 W. Plano Pkwy, Suite 300, Plano, Texas 75093.

2. Xerox is a New York corporation.

3. Upon information and belief, Defendant operates "Xerox of Dallas/Fort Worth" as a sales location in Lewisville, Texas.

4. Upon information and belief, Defendant has registered with the Texas Secretary of State to conduct business in Texas.

5. By registering to conduct business in Texas and by having a sales location where it regularly conducts business in this District, Defendant has a permanent and continuous presence in Texas.

6. Thus, Defendant has a regular and established place of business in the Eastern District of Texas.

JURISDICTION AND VENUE

7. This action arises under the Patent Act, 35 U.S.C. §§ 271 *et seq.*

8. Subject matter jurisdiction is proper in this Court under 28 U.S.C. §§1331 and 1338.

9. Xerox has purposefully availed itself of the rights and benefits of Texas law by engaging in systematic and continuous contacts with the State of Texas, including by selling printers, scanners, and other electronic products in the Eastern District of Texas, directly or through affiliates, and by continuously and systematically placing goods into the stream of commerce for distribution throughout Texas, including the Eastern District. Xerox also derives substantial revenue from the sale of those products in the Eastern District of Texas. Xerox also regularly conducts and solicits business within the State of Texas.

10. Venue is proper in this district pursuant to §1400(b) because Xerox has a regular and established place of business in this District, and Xerox has infringed the Diversified Observation's patents-in-suit (as shown below) in this District.

THE PATENTS-IN-SUIT

11. On January 5, 1999, the United States Patent and Trademark Office ("USPTO") duly and lawfully issued United States Patent No. 5,857,133 ("the '133 Patent"), entitled "Information Reading Apparatus Having a Contact Image Sensor." A true and correct copy of the '133 Patent is attached hereto as Exhibit A.

12. On July 2, 2002, the USPTO duly and lawfully issued United States Patent No. 6,414,461 ("the '461 Patent"), entitled "Scanner that Controls Stepping Motor Torque." A true and correct copy of the '461 Patent is attached hereto as Exhibit B.

13. On February 18, 2003, the USPTO duly and lawfully issued United States Patent No. 6,522,432 ("the '432 Patent"), entitled "Image Scanner with Automatic Signal Compensation." A true and correct copy of the '432 Patent is attached hereto as Exhibit C.

14. Diversified Observation is the assignee and owner of all rights, title, and interest in and to the '133, '461, and '432 Patents, including the right to assert all claims arising under said Patents and the right to any remedies for infringement of them. The assignments to the '133, '461, and '432 Patents are recorded in the USPTO: for the '133 Patent at Reel/Frame 043617/0005; for the '461 Patent at Reel/Frame 043616/0950; for the '432 Patent at Reel/Frame 043616/0906.

COUNT I – INFRINGEMENT OF UNITED STATES PATENT NO. 5,857,133

15. Diversified Observation repeats and realleges the allegations of the previous paragraphs as if fully set forth herein.

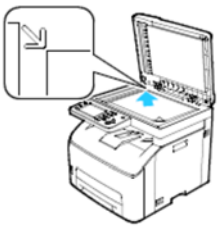
16. Without license or authorization, and in violation of 35 U.S.C. § 271(a), Xerox infringed at least Claim 1 during the lift of the '133 Patent, which expired on August 25, 2017, by making, using, importing, offering for sale, or selling image information reading apparatuses, including, but not limited to, the Xerox WorkCentre 6027.

17. Claim 1 of the ’133 Patent reads:

> 1. An image information reading apparatus having a housing comprising:
>
> a sheet table on top of said housing for supporting a document sheet;
>
> a contact image sensor module carried by a carriage disposed beneath the bottom surface side of said sheet table, said contact image sensor having a plurality of slide-blocks attached onto the top surface of said contact image sensor module;
>
> single guiding means crossed over the bottom center of said carriage for guiding said carriage along said sheet table, said single guiding means mounted on a pair of supports at opposite ends for holding and supporting said guiding means in a manner that said contact image sensor module can contact the bottom surface side of said sheet table tightly with said plurality of slide-blocks interposed therebetween; and
>
> driving means located at one side of said single guiding means for reciprocally moving said carriage along said sheet table from a first direction to a second direction.

Exh. A at 5:2–22.

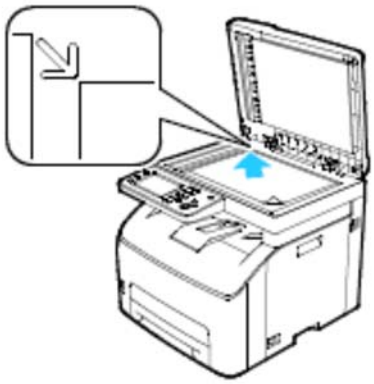
18. The Xerox WorkCentre 6027 is an information reading apparatus having a housing. For example, the Xerox WorkCentre 6027 includes a scanner (an information reading apparatus) having a housing, as shown in the images below:



Document Glass
Lift the automatic document feeder, then place the original face down in the upper left corner of the document glass.

(Xerox WorkCentre 6027 Color Multifunction Printer User Guide, attached hereto as Exhibit D, at p. 94.)

19. The Xerox Work Centre 6027 includes document glass (a sheet table) on top of the housing for supporting a document sheet:



Document Glass
Lift the automatic document feeder, then place the original face down in the upper left corner of the document glass.

(Exh. D at p. 94.)

20. The Xerox Work Centre 6027 includes a contact image sensor module carried by a carriage beneath the bottom surface of the sheet table:

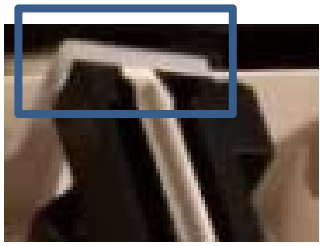
21. The contact image sensor module carried by a carriage is disposed beneath the bottom surface side of the document glass, as illustrated below:

(the document glass has been removed to better illustrate the contact image sensor module)

(end view of the contact image sensor module beneath the bottom surface of the document glass)

22. The contact image sensor module of the Xerox Work Centre 6027 has a plurality of slide blocks attached onto its top surface, as shown in the annotated image below:

23. The plurality of slide blocks included in the Xerox Work Centre 6027 are shown in more detail in the annotated images below:


24. The specification of the ’133 Patent, in support of the claimed “single guiding means,” states:

> The CIS carriage 104 is mounted on a guiding device 105 which can be a rail shaft, a transmission shaft or a guiding shaft. The guiding device 105 crosses over the bottom center of the CIS carriage 104 for guiding and supporting the CIS carriage 104 in balance while moving along the sheet table 102.

Exh. A at 3:15–18

25. Among the structures disclosed by the ’133 Patent as supporting the claimed “single guiding means” is a guiding shaft. Exh. A at 3:15–18.

26. Figure 1A of the ’133 Patent (Exh. A) illustrates the guiding device 105 as the guiding means, as illustrated below:

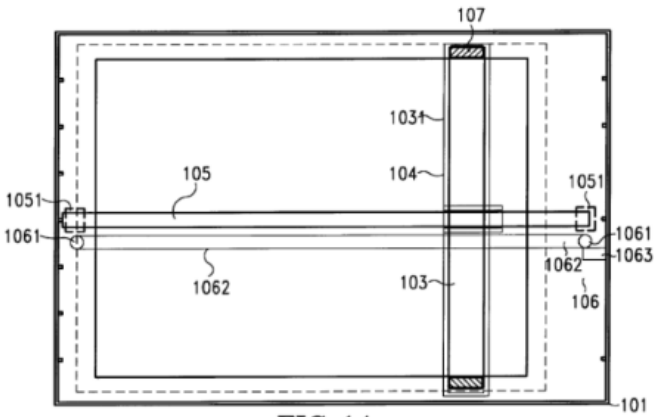
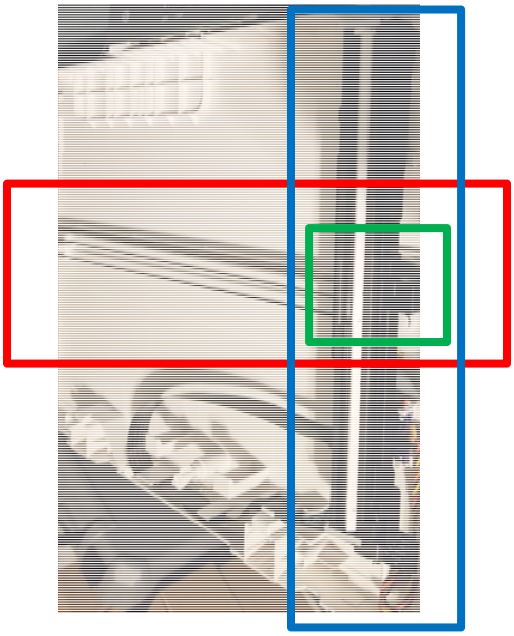


FIG.1A

27. The Xerox Work Centre 6027 includes a guiding shaft (a single guiding means), highlighted in red, crossed over the bottom center of the carriage, highlighted in blue, as illustrated in the annotated image below. The portion at which the carriage and guiding shaft cross is circled in green:

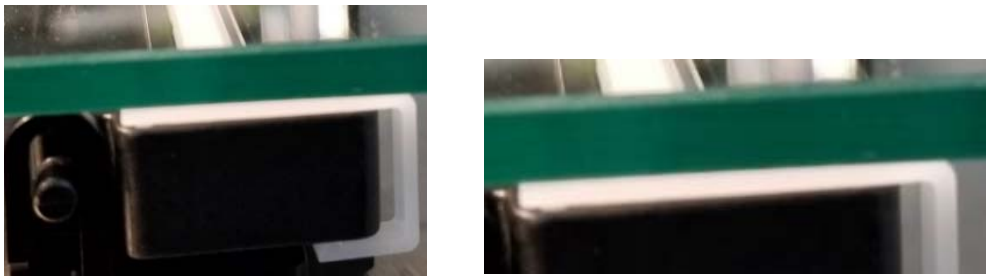


28. The guiding shaft included in the Xerox Work Centre 6027 is shown in more detail in the image below:

29. The guiding shaft of the Xerox Work Centre 6027 is mounted on a pair of supports at opposite ends for holding the guiding shaft, as shown in the annotated image below:

30. The supports of the guiding shaft are shown in more detail below:

31. The supports of the guiding shaft of the Xerox Work Centre 6027 hold the guiding shaft in a manner such that the contact image sensor module can contact the bottom surface side of the document glass tightly with the plurality of slide blocks interposed therebetween:



32. The specification of the ’133 Patent, in support of the claimed “driving means,” states:

> When the driving motor 1063 is enabled, it drives the set of pulleys 1061. The rotation of the pulleys 1061 will drive the conveying element 1062 which further move the CIS carriage 104 from one end of the sheet table 102 to the other end of the sheet table 102 to complete the image reading process of the sheet.

Exh. A at 3:54–59

33. Among the structures disclosed by the ’133 Patent as supporting the claimed “driving means” is a driving motor. Exh. A at 3:54–59.

34. The Xerox Work Centre 6027 includes a driving motor (a driving means):

35. The driving motor is located at one side of the guiding shaft as shown in the annotated image below:

36. The driving motor of the Xerox Work Centre 6027 reciprocally moves the carriage along the document glass from a first direction to a second direction, as shown below (red arrow added to show a first direction of movement, which is reversed for the second direction):

37. As shown above, each element of Claim 1 of the ’133 Patent is found in the Xerox WorkCentre 6027.

38. Diversified Observation is entitled to recover from Xerox the damages sustained by Diversified Observation as a result of Xerox's infringement of at least Claim 1 of the ’133 Patent in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II – INFRINGEMENT OF UNITED STATES PATENT NO. 6,414,461

39. Diversified Observation repeats and realleges the allegations of the previous paragraphs as if fully set forth herein.

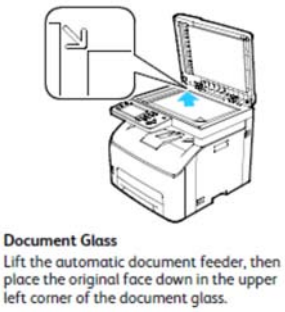
40. Without license or authorization, and in violation of 35 U.S.C. § 271(a), Xerox infringed and continues to infringe at least Claim 1 of the ’461 Patent by making, using, importing, offering for sale, or selling scanners, including, but not limited to the Xerox WorkCentre 6027.

41. Claim 1 of the ’461 Patent reads:

> 1. A scanner comprising:
> a housing having a transparent platform, a document to be scanned being placed on the transparent platform;
> a scanning module movably installed inside the housing for scanning the document;
> a driving module installed inside the housing for driving the scanning module, the driving module comprising:
> a stepping motor for driving the scanning module forward and backward so that the scanning module scans the document; and
> a motor driving circuit for controlling the stepping motor according to a driving signal; and
> a control circuit for controlling the operations of the scanner, the control circuit comprising a memory, the memory storing a torque table and a driving program, the torque table recording a plurality of torque values, each of the torque values corresponding a predetermined condition when the stepping motor produces the corresponding torque, and the driving program chooses one of the torque values according to the predetermined condition, the motor driving circuit receiving the corresponding driving signal according to the torque value chosen by the driving program and controlling the stepping motor so that the stepping motor generates a torque according to the driving signal;
> wherein the control circuit controls the stepping motor to generate different torque so that the scanning module scans the document at different speeds.

Exh. B at 4:58–5:18.

42. The Xerox Work Centre 6027 includes a scanner, as shown in the images below:



(Exh. D at p. 94.)

43. The Xerox Work Centre 6027 includes a housing having a document glass (a transparent platform), and a document to be scanned may be placed on the document glass:

44. The Xerox Work Centre 6027 includes an image sensor in a carriage (a scanning module) moveably installed inside the housing for scanning a document as shown below (red arrow added for clarity):

45. The Xerox Work Centre 6027 includes a driving motor (a driving module).

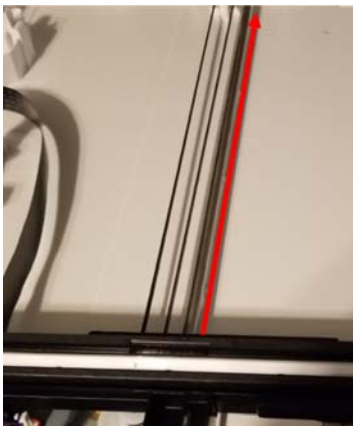
46. The driving motor is installed inside the housing for driving the scanning module:

47. The driving motor of the Xerox Work Centre 6027 includes a stepping motor:

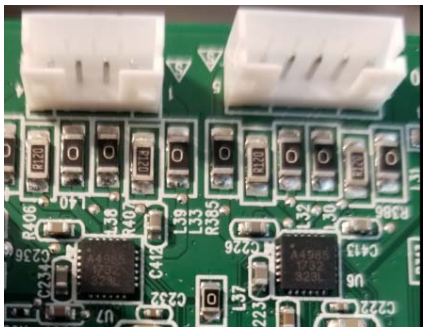
Item	2T35X2	
Standard voltage	24 V	24 V
Standard Current	300 mA / Phase	520 mA / Phase
Number of phase	4 phase	4 phase
Step angles	3.75° / Step	3.75° / Step
Excitation	2-2 Bipolar	W 1-2 Bipolar
pull-out torque	79 g-cm or more / 1800 pps	62 g-cm or more / 25200 pps
pull-in torque	65 g-cm or more / 800 pps	84 g-cm or more / 2400 pps
Holding torque	115 g-cm or more	130 g-cm or more
Resistance per phase	8.3 Ω	6.4 Ω
Max pull-out pulse rate	5000 pps or more	34000 pps or more
Max pull-in pulse rate	1275 pps or more	4080 pps or more

See Neocene General Catalogue, attached hereto as Exhibit E, at p. 20.

48. The stepping motor drives the image sensor in a carriage such that the carriage moves forward and backward so that the image sensor in a carriage scans the document, as illustrated below (red arrow added for clarity to show reversible direction of forward and backward movement):



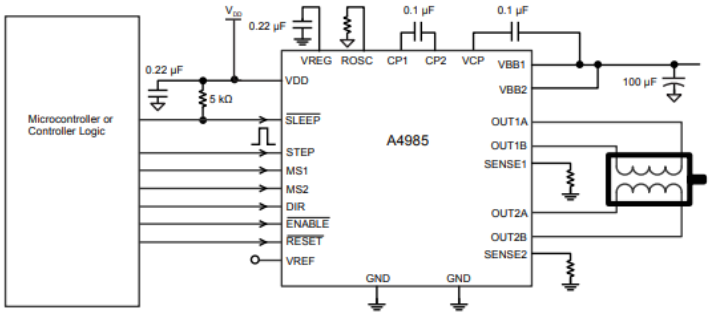
49. The driving motor of the Xerox Work Centre 6027 includes the motor driving portion of the Allegro Microsystems A4985 DMOS Microstepping Driver (a motor driving circuit) for controlling the stepping motor according to a driving signal:



Allegro MicroSystems, LLC

A4985

DMOS Microstepping Driver with Translator
And Overcurrent Protection



(DMOS Microstepping Driver with Translator and Overcurrent Protection Datasheet, attached hereto as Exhibit F, at p. 1.)

50. The driving motor of the Xerox Work Centre 6027 includes a 545 MHz ARM11MP processor (a control circuit) for controlling the operations of the scanner:

Controller Specifications

Processor

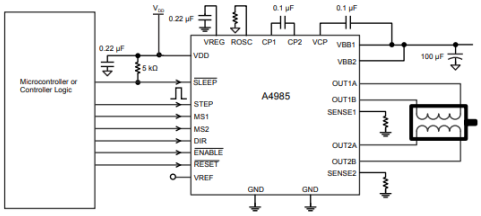
525 MHz ARM11MP

Memory

512 MB RAM

Exh. D, at p. 203.

51. The processor of the Xerox WorkCentre 6027 can be coupled to the Allegro Microsystems A4985 DMOS Microstepping Driver:



Exh. F at p. 1.

52. The control circuit in the Xerox Work Centre 6027 includes a memory.

Exh. D at p. 203.

53. The memory stores a torque table and a driving program.

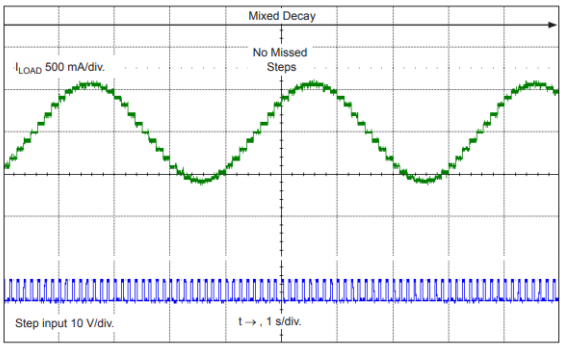


Figure 3: Continuous Stepping Using Automatically-Selected Mixed Stepping (ROSC pin grounded)

Exh. F at p. 8.

54. The torque table includes a plurality of torque values. Each of the torque values corresponds to a predetermined condition when the stepping motor produces the corresponding torque, and the driving program chooses one of the torque values according to the predetermined condition.

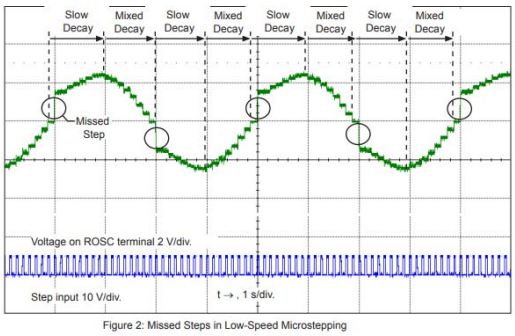


Figure 2: Missed Steps in Low-Speed Microstepping

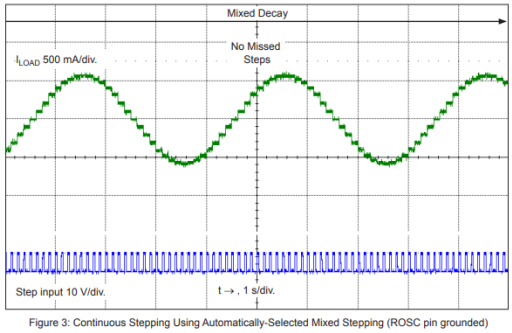
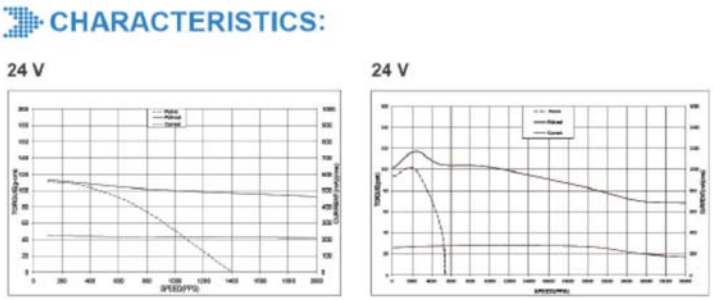


Figure 3: Continuous Stepping Using Automatically-Selected Mixed Stepping (ROSC pin grounded)

Id.

55. The motor driving circuit receives the corresponding driving signal according to the torque value chosen by the driving program and controls the stepping motor so that the stepping motor generates a torque according to the driving signal.



Exh. E at p. 20.

56. The control circuit of the Xerox Work Centre 6027 controls the stepping motor to generate different torque so that the scanning module is capable of scanning the document at different speeds. As an example, the control circuit modifies the torque output of the stepping motor so that the scanning module scans more slowly for color documents and faster for black and white documents:

Input Speed – Black-and-white	Scan up to 14 ipm – 8.5 x 11 in. / A4
Input Speed – Color	Scan up to 9 ipm – 8.5 x 11 in. / A4
Resolution (maximum)	200 dpi 300 dpi 600 dpi 1200 dpi (TWAIN only)

See Xerox® Phaser® 6022 Color Printer and Xerox® WorkCentre® 6027 Color Multifunction Printer Detailed Specifications, attached hereto as Exhibit G, at p. 3.

57. As shown above, each element of Claim 1 of the ’461 Patent is found in the Xerox WorkCentre 6027.

58. Diversified Observation is entitled to recover from Xerox the damages sustained by Diversified Observation as a result of Xerox's infringement of at least Claim 1 of the ’461 Patent

in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT III – INFRINGEMENT OF UNITED STATES PATENT NO. 6,522,432

59. Diversified Observation repeats and realleges the allegations of the previous paragraphs as if fully set forth herein.

60. Without license or authorization, and in violation of 35 U.S.C. § 271(a), Xerox has infringed and continues to infringe at least Claim 1 of the ’432 Patent by making, using, importing, offering for sale, or selling an image scanner for scanning a document including but not limited to the Xerox WorkCentre 3215 and Xerox WorkCentre 5335.

1. Claim 1 of the ’432 Patent reads:

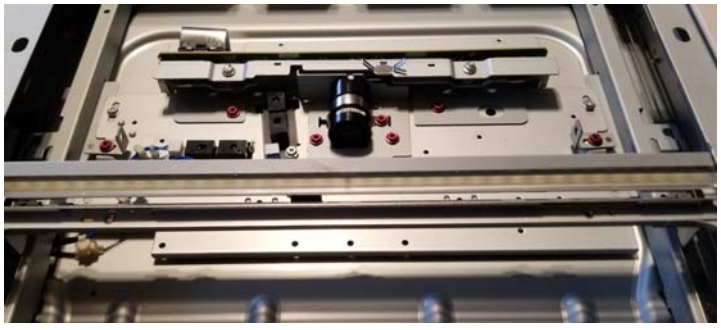
> 1. An image scanner for scanning a document comprising:
> (1) a test region;
> (2) a light source for illuminating the document and the test region;
> (3) optical means for conveying the light reflected from the document and the test region;
> (4) a line image sensor for receiving the light from the optical means and generating an image signal corresponding to the light reflected from the document and a brightness signal corresponding to the light reflected from the test region; the line image sensor comprising an array of (red, green, blue)(R,G,B) sensing elements for converting the light received from the optical means into an array of corresponding (R,G,B) signals wherein both the image signal and the brightness signals generated by the line image sensor are formed by an array of (R,G,B) signals; and
> (5) a signal compensation circuit for amplifying the image signal according to the brightness signal to compensate the instability of the light source;
> the signal compensation circuit comprising an A/D converter for digitizing the (R,G,B) signals of the image signal and the brightness signal, and a digital processor for adjusting the digitized (R,G,B) signals of the image signal according to the digitized (R,G,B) signals of the brightness signal.

Exh. C at 5:12–38 (numerals (1)–(5) in original).

61. The Xerox WorkCentre 5335 includes an image scanner for scanning a document:

62. The image scanner of the Xerox Work Centre 5335 includes a test region (highlighted in the below annotated image):

63. The Xerox Work Centre 5335 includes a contact image sensor ("CIS") that includes a light source for illuminating a document and the test region.



64. The CIS module of the Xerox Work Centre 5335 includes a rod lens that directs light generated by LEDs to the document and the test region:

65. The specification of ’432 Patent, in support of the claimed “optical means for conveying the light reflected from the document and the test region,” states:

> The scanner 10 comprises . . . an optical means which comprises a reflex mirror 18 and a lens 20 for conveying the light reflected from the document 16 and the test region 12 . . . .

Exh. C at 2:54–66.

66. Figure 1 of the ’432 Patent illustrates the optical means:

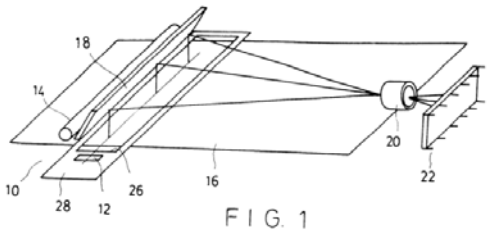
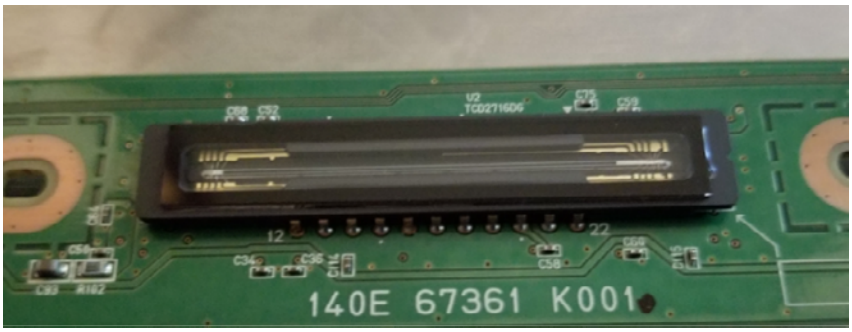


FIG. 1

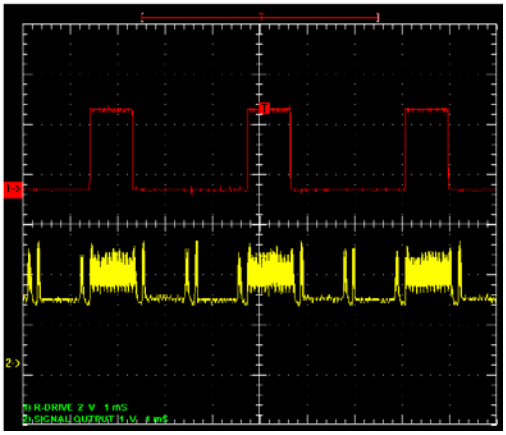
67. Among the structures disclosed by the ’432 Patent as supporting the claimed “optical means” is a light guide that conveys light reflected from the document and the test region. Exh. C at 2:54–66.

68. The Xerox Work Centre 5335 includes a light guide built into the housing of the CIS module (an optical means for conveying the light reflected from the document and the test region):

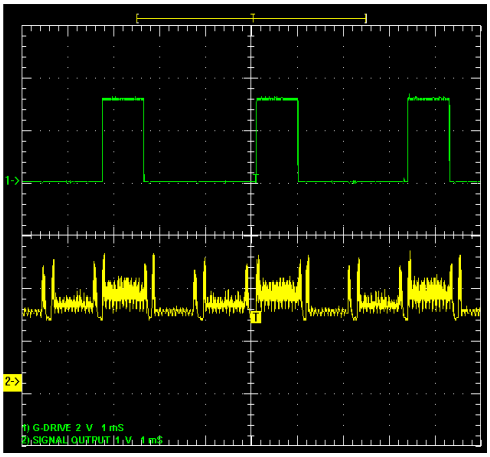
69. The Xerox Work Centre 5335 includes a line image sensor for receiving light from the light guide:



70. The line image sensor of the Xerox Work Centre 5335 generates an image signal corresponding to the light reflected from the document. For example, the image below illustrates a signal output from the Xerox Work Centre 5355 from scanning a red test pattern at the document region:

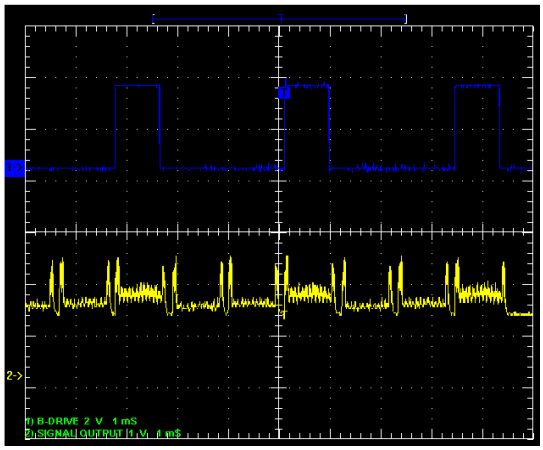


71. The line image sensor of the Xerox Work Centre 5335 generates an image signal corresponding to the light reflected from the document. For example, the image below illustrates a signal output from the Xerox Work Centre 5355 from scanning a green test pattern at the document region:

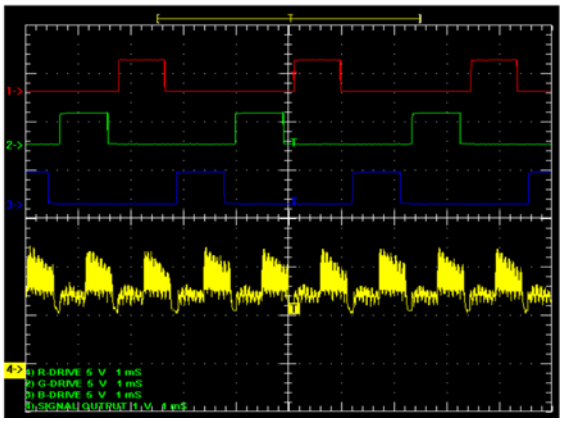


72. The line image sensor of the Xerox Work Centre 5335 generates an image signal corresponding to the light reflected from the document. For example, the image below illustrates

a signal output from the Xerox Work Centre 5355 from scanning a blue test pattern at the document region:

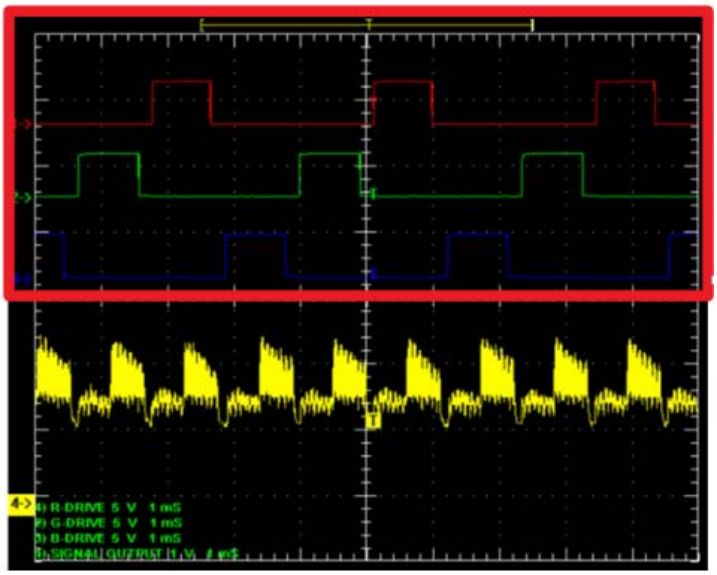


73. The line image sensor of the Xerox Work Centre 5335 generates a brightness signal corresponding to the light reflected from the test region:



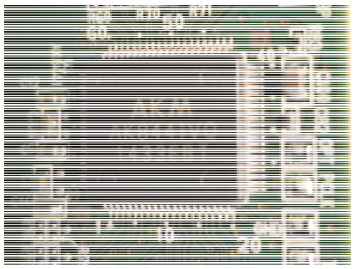
74. The line image sensor of the Xerox Work Centre 5335 includes an array of RGB sensing elements:

75. The RGB sensing elements convert light received from the light guide into an array of corresponding RGB signals, wherein both the image signal and the brightness signals generated by the line image sensor are formed by an array of RGB signals. As illustrated in the image below, the image and brightness signals generated by the line image sensor include isolatable signals from the RGB sensor array:



76. The Xerox Work Centre 5335 includes a signal compensation circuit for amplifying the image signal according to the brightness signal to compensate for the instability of the light source:

77. The signal compensation circuit includes the Asahi Kasei AK8441 6-channel 10-bit 35MSPS/CH AFE chip, an analog-to-digital converter that adjusts the offset level of an analog input signal and includes a programmable gain to support pixel-level inflection (i.e., light-source instability) caused by luminance:



AsahiKASEI [AK8441]

AKM

AK8441

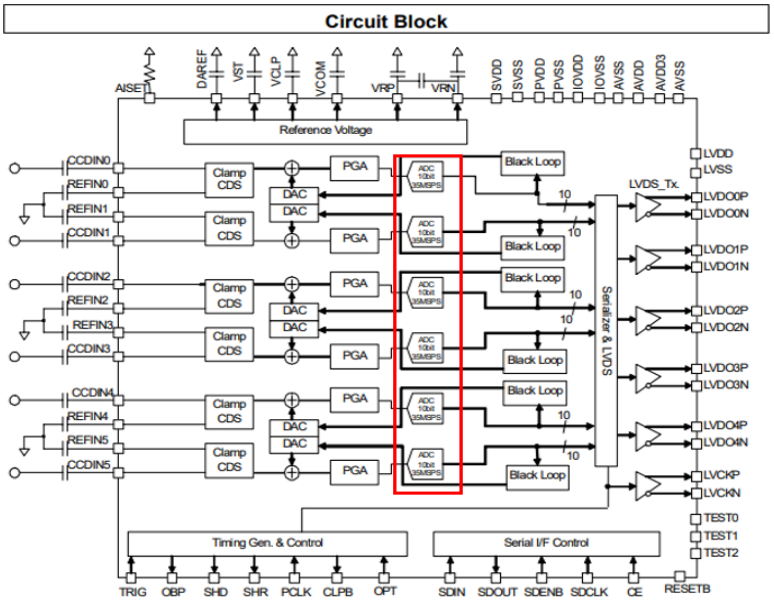
6 Channel 10 Bit 35MSPS/ch AFE for Linear CCD

Device Outline

The AK8441 is a +3.3 V CMOS, 6 Channels 10 Bit 10M~35MSPS/ch ADC which integrates on-chip Offset Adjust DAC, Gain Adjust PGA and CDS circuit. The device is optimized for Flatbed Scanner applications etc.

Asahi Kasei AK8441 Datasheet, attached hereto as Exhibit H.

78. The Asahi Kasei AK8441 includes an analog-to-digital converter for digitizing the RGB signals of the image signal and the brightness signal:

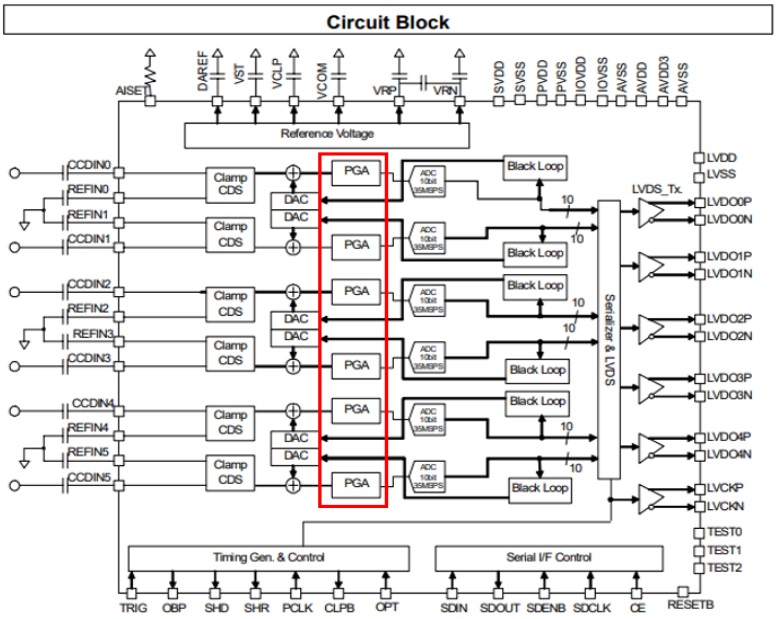


☐ ADC A/D Converter

This is a 10 Bit, 40 MSPS A/D converter to convert an Image signal level into digital data after offset adjustment and gain adjustment are made. There are 3 ADCs and 2 channels are connected to each ADC through a channel multiplexer.

Exh. H.

79. The Asahi Kasei AK8441 includes a programmable gain amplifier (PGA):



Id.

80. The Programmable Gain Amplifier (PGA) unit is operable to modify the brightness and image signals generated by the scanner module:

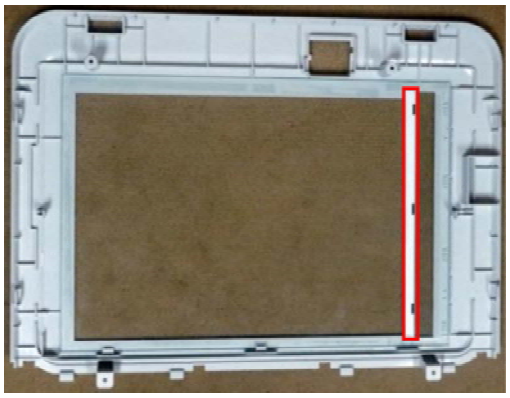
- PGA : Gain range 0dB~18dB , 6bit, 6 channel

Id. at p. 1.

81. The Xerox Work Centre 3215 has an image scanner for scanning a document:

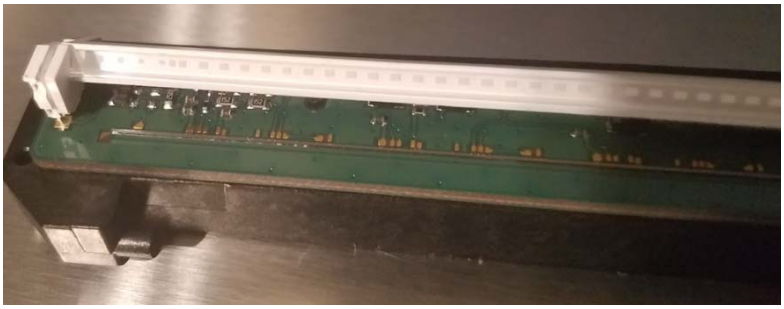
(Xerox WorkCentre 3215 Brochure, attached hereto as Exhibit I, at p. 3).

82. The image scanner of the Xerox Work Centre 3215 includes a test region (highlighted in the below annotated image):

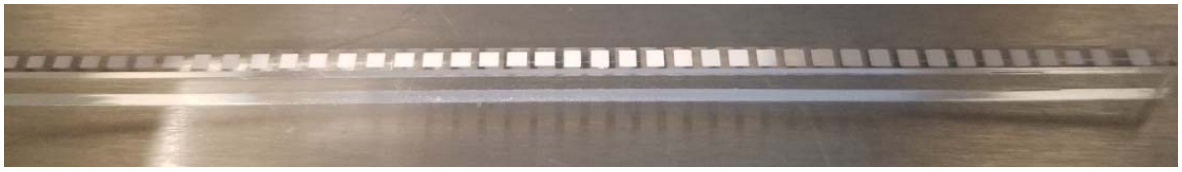


83. The Xerox Work Centre 3215 includes a contact image sensor ("CIS") that includes a light source for illuminating a document and the test region.

84. The CIS module of the Xerox Work Centre 3215 includes a rod lens that directs light generated by LEDs to the document and the test region:



85. The image below illustrates the rod lens removed from the housing:



86. The specification of ’432 Patent, in support of the claimed “optical means for conveying the light reflected from the document and the test region,” states:

> The scanner 10 comprises . . . an optical means which comprises a reflex mirror 18 and a lens 20 for conveying the light reflected from the document 16 and the test region 12 . . . .

Exh. C at 2:54–66.

87. Figure 1 of the ’432 Patent illustrates the optical means:

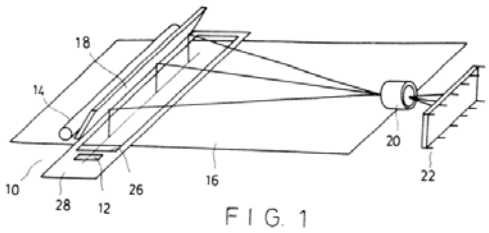


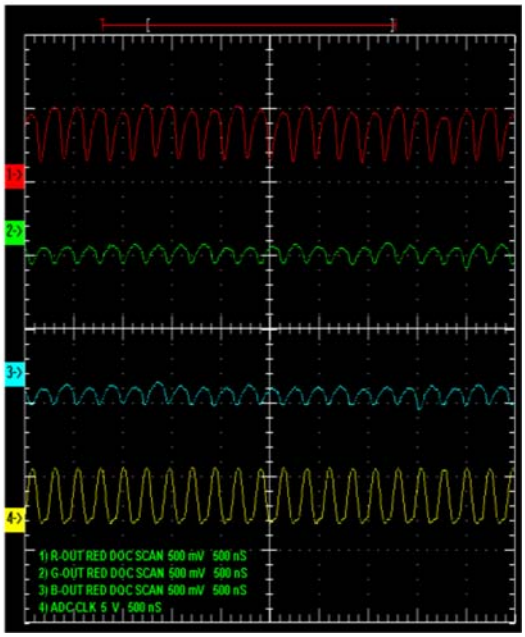
FIG. 1

88. Among the structures disclosed by the ’432 Patent as supporting the claimed “optical means” is a light guide that conveys light reflected from the document and the test region. Exh. C at 2:54–66.

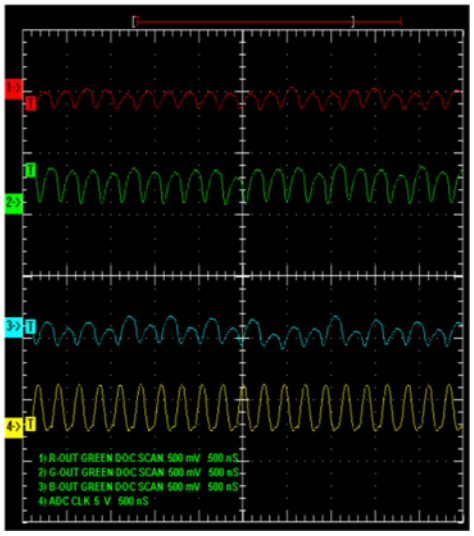
89. The Xerox Work Centre 3215 includes a light guide built into the housing of the CIS module (an optical means for conveying the light reflected from the document and the test region):

90. The Xerox Work Centre 3215 includes a line image sensor for receiving light from the light guide:

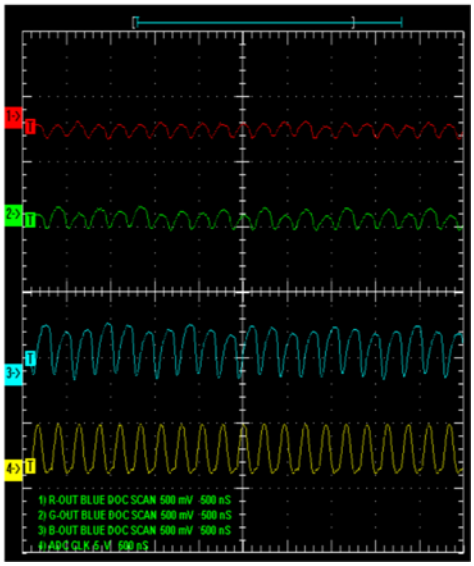
91. The line image sensor of the Xerox Work Centre 3215 generates an image signal corresponding to the light reflected from the document. For example, the image below illustrates a signal output from the Xerox Work Centre 5355 from scanning a red test pattern at the document region:



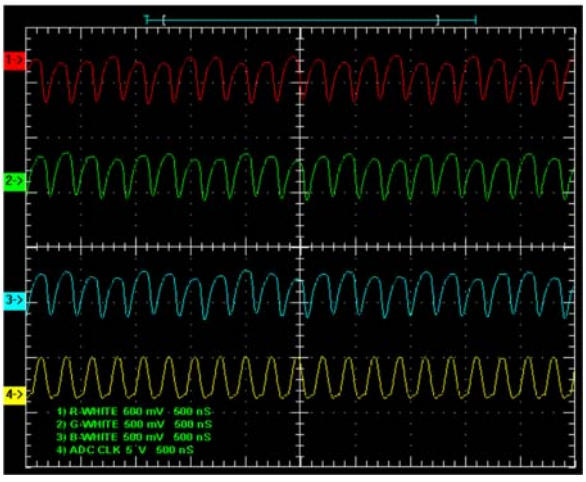
92. The line image sensor of the Xerox Work Centre 3215 generates an image signal corresponding to the light reflected from the document. For example, the image below illustrates a signal output from the Xerox Work Centre 5355 from scanning a green test pattern at the document region:



93. The line image sensor of the Xerox Work Centre 3215 generates an image signal corresponding to the light reflected from the document. For example, the image below illustrates a signal output from the Xerox Work Centre 5355 from scanning a blue test pattern at the document region:

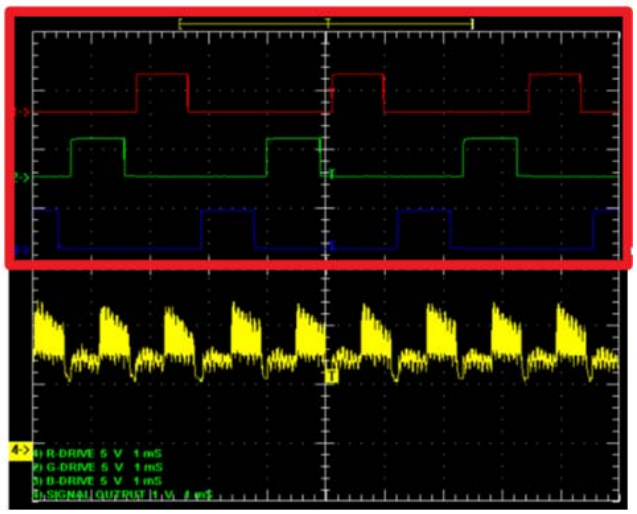


94. The line image sensor of the Xerox Work Centre 3215 generates a brightness signal corresponding to the light reflected from the test region:



95. The line image sensor of the Xerox Work Centre 3215 includes an array of RGB sensing elements.

96. The RGB sensing elements convert light received from the light guide into an array of corresponding RGB signals, wherein both the image signal and the brightness signals generated by the line image sensor are formed by an array of RGB signals. As illustrated in the image below, the image and brightness signals generated by the line image sensor include isolatable signals from the RGB sensor array:



97. The Xerox Work Centre 3215 includes a signal compensation circuit for amplifying the image signal according to the brightness signal to compensate for the instability of the light source:

98. The signal compensation circuit includes the Holtek HT2V26A 16-bit CCD/CIS Analog Signal Processor, an analog-to-digital converter that adjusts the offset level of an analog

input signal and includes a programmable gain to support pixel-level inflection (i.e., light-source instability) caused by luminance:

General Description

The HT82V26A is a complete analog signal processor for CCD imaging applications. It features a 3-channel architecture designed to sample and condition the outputs of tri-linear color CCD arrays. Each channel consists of an input clamp, Correlated Double Sampler (CDS), offset DAC and Programmable Gain Amplifier (PGA), and a high performance 16-bit A/D converter.

The CDS amplifiers may be disabled for use with sensors such as Contact Image Sensors (CIS) and CMOS active pixel sensors, which do not require CDS.

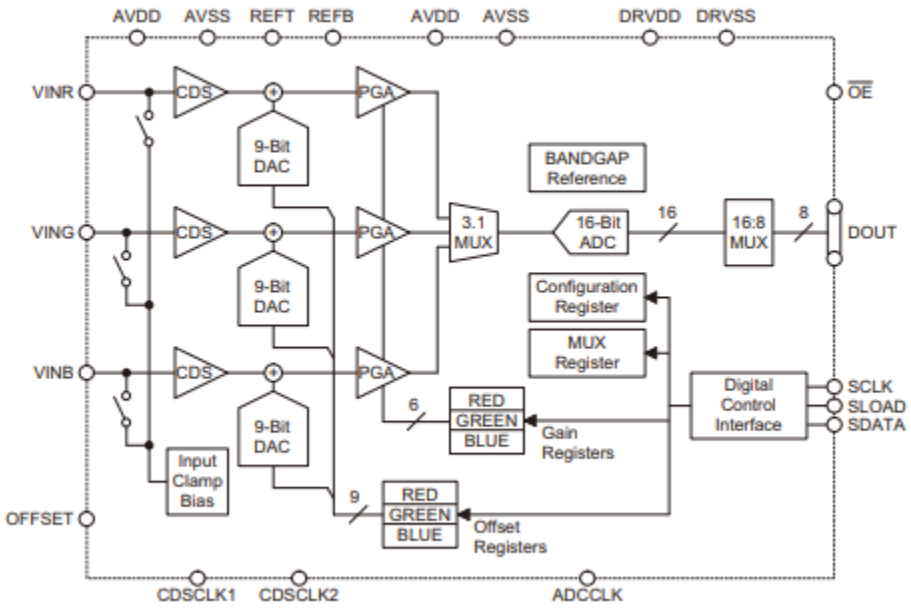
The 16-bit digital output is multiplexed into an 8-bit output word that is accessed using two read cycles. The internal registers are programmed through a 3-wire serial interface, which provides gain, offset and operating mode adjustments.

The HT82V26A operates from a single 5V power supply, typically consumes 400mW of power.

(Holtek HT82V26A Datasheet, attached hereto as Exhibit J, at p. 1.)

99. The Holtek HT82V26A includes an analog-to-digital converter for digitizing the RGB signals of the image signal and the brightness signal:

Block Diagram



Id. at p. 2.

100. The Asahi Kasei AK8441 includes a programmable gain amplifier (PGA):

General Description

The HT82V26A is a complete analog signal processor for CCD imaging applications. It features a 3-channel architecture designed to sample and condition the outputs of tri-linear color CCD arrays. Each channel consists of an input clamp, Correlated Double Sampler (CDS), offset DAC and Programmable Gain Amplifier (PGA), and a high performance 16-bit A/D converter.

The CDS amplifiers may be disabled for use with sensors such as Contact Image Sensors (CIS) and CMOS active pixel sensors, which do not require CDS.

The 16-bit digital output is multiplexed into an 8-bit output word that is accessed using two read cycles. The internal registers are programmed through a 3-wire serial interface, which provides gain, offset and operating mode adjustments.

The HT82V26A operates from a single 5V power supply, typically consumes 400mW of power.

Id. at p. 1.

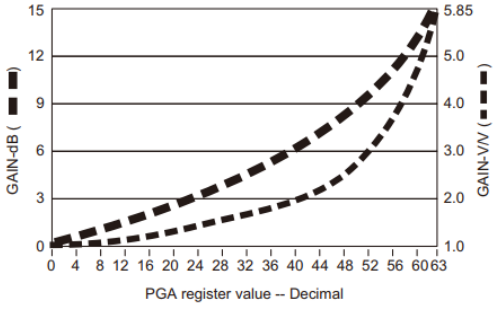
101. The Programmable Gain Amplifier (PGA) unit is operable to modify the brightness and image signals generated by the scanner module:

PGA Gain Registers

There are three PGA registers for use in individually programming the gain in the red, green and blue channels. Bits D8, D7 and D6 in each register must be set low, and bits D5 through D0 control the gain range in 64 increments. See figure for a graph of the PGA gain versus PGA register code. The coding for the PGA registers is a straight binary, with an all zero words corresponding to the minimum gain setting (1x) and an all one word corresponding to the maximum gain setting (5.85x).

The HT82V26A uses one Programmable Gain Amplifier (PGA) for each channel. Each PGA has a gain range from 1x (0dB) to 5.85x (15.3dB), adjustable in 64 steps. The Figure shows the PGA gain as a function of the PGA register code. Although the gain curve is approximately linear in dB, the gain in V/V varies in nonlinear proportion with the register code, according to the following the equation: $\text{Gain}=\frac{5.85}{1+4.85x(\frac{63-G}{63})}$

Where G is the decimal value of the gain register contents, and varies from 0 to 63.



PGA Gain Transfer Function

Id. at p. 7.

102. As shown above, each element of Claim 1 of the ’432 Patent is found in the Xerox Work Centre 3215.

103. Diversified Observation is entitled to recover from Xerox the damages sustained by Diversified Observation as a result of Xerox's infringement of at least Claim 1 of the ’432 Patent in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

JURY DEMAND

Diversified Observation hereby demands a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Diversified Observation requests that this Court enter judgment against Xerox as follows:

A. An adjudication that Xerox has infringed the ’133, ’461, and ’432 Patents;

B. An award of damages to be paid by Xerox adequate to compensate Diversified Observation for Xerox's past infringement of the ’133 Patent, including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;

C. An award of damages to be paid by Xerox adequate to compensate Diversified Observation for Xerox’s past infringement of the ’461 and ’432 Patents and any continuing or future infringement through the date such judgment is entered, including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;

D. A declaration that this case is exceptional under 35 U.S.C. § 285, and an award of Diversified Observation's reasonable attorneys' fees; and

E. An award to Diversified Observation of such further relief at law or in equity as the Court deems just and proper.

Dated: May 14, 2018

/s/ Craig S. Jepson

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