

Patent Publication (A)

Patent Application Publication No.: H06-133081

Publication Date: May 13, 1994

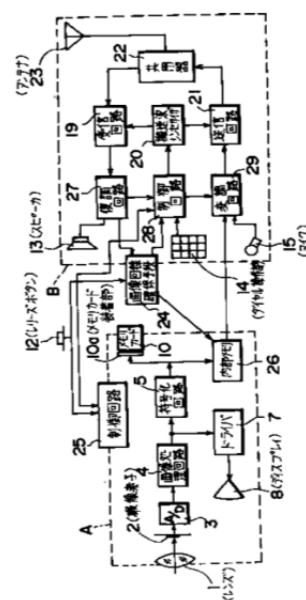
Application No.: H04-302935	Applicant: KYOCERA CORP
Application Filing Date: October 15, 1992	Inventor(s): Kuugo MORITA

Title: ELECTRONIC STILL CAMERA WITH PORTABLE TELEPHONE FUNCTION

[Abstract]

[Purpose] To improve instantaneity by loading a portable telephone function to an electronic still camera and constituting the camera to be capable of immediately transmitting a taken picture to a large storage medium at another place through the use of a telephone line. Also, to miniaturize the whole camera by making a display for confirming the taken picture attachable and detachable.

[Constitution] When pressing a release button 12 halfway, power source is supplied to a camera part and a control circuit 25 controls for photographing. A subject is displayed on a display 8 through a lens 1, an image pickup element 2, an image processing circuit 4 and a driver 7. When a composition is decided and the release button 12 is pressed, picture data is recorded in an internal memory 26 and at the same time, a picture line ensuring means 24 instructs a control circuit 28 of a portable telephone set to call a previously-inputted telephone number to connect the line. When the line is connected, picture data in the internal memory 26 is read out. The control circuit 28 sends the picture data to the line through a modulation circuit 29 and a transmitting circuit 21.



1 **[Claims]**

2 **[Claim 1]**

3 An electronic still camera with portable telephone function comprising a digital electronic
4 still camera equipped with a portable telephone function part,

5 the digital electronic still camera including an image input means having a lens,
6 an image pickup element, etc., an image processing means, and an image storing means, and

7 the portable telephone function part sending and receiving a signal of
8 telephonic conversation of the phone by wireless,

9 wherein the image storing means has an internal memory, an output of which is
10 connected to an input of a modulation circuit of the portable telephone function part,

11 wherein the digital still camera includes a control means which turns on a power of a
12 camera part when a release button is pressed, inputs an image from the image input means,
13 stores the image in the internal memory of the image storing means, and then turn off the power
14 of the camera part,

15 wherein the digital still camera further includes a picture line ensuring means which
16 operates a control means of the portable telephone function part so that a call is initiated at the
17 same time as the release button is pressed and a previously-inputted recipient's telephone
18 number is sent out and called, and which causes an image data stored in the internal memory to
19 be read out when the line is connected,

20 wherein the portable telephone function part includes a control part which sends out the
21 image data from the internal memory when the line is connected by the control of the picture
22 line ensuring means and disconnects the line when the image data sending is complete, and
23 which connects the line again after a fixed period of time when the line is not connected.

24

25 **[Claim 2]**

1 The electronic still camera with portable telephone function of claim 1, wherein a
2 memory card type display is prepared, the memory card type display comprising:
3 a driver part;
4 a display part;
5 a terminal which is attachable to a memory card attaching part of the image storing
6 means; and
7 a structure which takes in outdoor light from a back side of the display part, and
8 wherein the display is connected to the memory card attaching part, and used as a
9 viewfinder and a playback screen.

10

11 **[Description]**

12 **[0001]**

13 **[Technical Field]**

14 The present invention relates to an electronic still camera which is equipped with a
15 portable telephone set which sends and receives a signal of telephonic conversation by wireless.

16 **[0002]**

17 **[Background Art]**

18 In recent years, electronic still cameras have been attempted to be digitalized due to
19 stability of circuits, etc. Similarly, memory cards are used as external storage media due to no
20 deterioration of image. Fig. 10 is a circuit diagram which shows one example of a conventional
21 digital electronic still camera. Light, not shown in the figure, from a subject forms an image on
22 an image pickup element 2 by a lens 1. An output of the image pickup element 2 is converted
23 into a digital signal by an A/D converter 3, and a predetermined process is performed to the
24 output by an image processing circuit 4. Image data of the image processing circuit 4 is
25 compressed and encrypted. The encrypted image data is processed to be expanded by a
26 decryption circuit 6, and displayed on a display 8 by a driver 7. When a release button 12 is

1 pressed, the information of the pressing is transmitted to a control circuit 11, and the encrypted
2 image data is stored in a memory card 10. An internal memory 9 is used, for example, when a
3 storage capacity of the memory card 10 is not enough, to temporarily store the photographed
4 image and store the photographed image in a replaced memory card which has an empty
5 storage capacity.

6 **[0003]**

7 **[Technical Problem]**

8 There is a problem that, although memory cards are used as external storage media like
9 the above, the number of images which can be stored in a memory card is small and memory
10 cards are still expensive. Also, more and more liquid crystal displays are used as a viewfinder
11 of cameras, video cameras, etc. for observation of shooting subjects and verification of shooting
12 images in recent years due to view ability, etc. However, there is a drawback that the shape of
13 the entire camera becomes larger by using a liquid crystal display.

14 **[0004]**

15 Therefore, as a means for solve the above mentioned drawback, the inventors of the
16 present invention thought about installing portable telephone function in order to be able to
17 photograph without loading a memory card. Fig. 11 is a circuit diagram showing one example of
18 a conventional portable telephone set. When a call operation is performed by inputting a
19 recipient's phone number with a dial operating part 14, a control circuit 17 sends out the
20 inputted phone number to a transmitting circuit 21 through a modulation circuit 18. At the
21 transmitting circuit 21, the inputted phone number is superposed on a carrier wave of a carrier
22 wave synthesizer 20, and transmitted through a duplexer 22 and an antenna 23. When there is
23 a response that it is connected to the recipient, telephonic conversation becomes possible.
24 Voice input from microphone 15 undergoes a predetermined modulation processing performed
25 by the modulation circuit 18, and is sent to the other end of the line through transmission circuit
26 21, whereas the radio wave transmitted from the recipient is received by the receiving circuit 19

1 via the antenna 23 and duplexer 22. The carrier component is removed by the receiving circuit
2 19 and is demodulated by the demodulation circuit 16. The demodulated audio signal is then
3 reproduced from the speaker 13.

4 **[005]**

5 The present invention has been made based on the above considerations, which
6 purpose is to equip a cellular phone function onto an electronic still camera. By configuring the
7 device to instantly transmit captured images to large storage mediums placed at different
8 locations via telephone line, responsiveness is improved, where the lack of memory on the
9 device can be resolved in following through with the provision of this invention as a portable
10 phone equipped with an electronic still camera. In accordance to the electronic still camera,
11 another object of the present invention is to aim at providing a miniaturized version of the
12 electronic still camera with a portable phone capacity, by making the display screen used for
13 confirming captured images and observing photographic subjects detachable.

14 **[006]**

15 **[Solution to the Problem]**

16 In order to achieve the aforementioned purposes, the present invention involving the
17 electronic still camera with a portable phone function, a portable phone function unit for
18 wireless transmitting and receiving telephone call signals will be equipped to a digital electronic
19 still camera having a lens, image input means consisting of an imaging device or the like, an
20 image processing means, image encoding means as well as an image storing means. The
21 output of the internal memory of the aforementioned image storage means is connected to the
22 input of the modulation circuit of the portable phone function, and when the release button is
23 pressed on the aforementioned electronic still camera, the image input means is loaded through
24 the power supply of the camera unit, and after the image is stored into the internal memory of
25 the image storage means, the control means for powering off the camera unit is put on standby,
26 where at the instance the aforementioned release button is pressed, the operating control unit of

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