

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA**

**IN RE PAPST LICENSING GMBH & CO.  
KG LITIGATION**

**This Document Relates To:  
Nikon, No. 08-CV-985**

**Misc. Action No. 07-493 (RMC)  
MDL Docket No. 1880**

**NIKON CORPORATION'S AND NIKON INC.'S  
SUPPLEMENTAL INVALIDITY CONTENTIONS**

Pursuant to this Court's Second Practice and Procedure Order and the June 17, 2008 Minute Order, defendants Nikon Corporation and Nikon Inc. (collectively "Nikon") submit the following Supplemental Invalidity Contentions ("Supplemental Invalidity Contentions") in response to the Asserted Claims and Infringement Contentions ("Infringement Contentions") submitted by plaintiff Papst Licensing GmbH & Co. KG ("Papst") to Nikon on June 18, 2008.

**PRELIMINARY STATEMENTS**

Nikon incorporates by reference, as if fully set forth herein, the entirety of: (1) the Camera Manufacturers' Invalidity Contentions from June 18, 2008; (2) Nikon's Invalidity Contentions from June 30, 2008; and (3) Hewlett-Packard Co.'s Supplemental Invalidity Contentions from July 11, 2008. Nikon bases these Supplemental Invalidity Contentions on its current knowledge, understanding, and belief as to the facts and information available as of the date of these contentions. Nikon has not yet completed its investigation, collection of information, discovery, or analysis relating to U.S. Patent Nos. 6,470,399 and 6,895,449 ("the patents-in-suit"), and Nikon may supplement or modify these contentions based on further investigation and/or discovery.

Further, Papst's Infringement Contentions, including Papst's proposed constructions of claim language, are deficient in many respects and do not provide Nikon with sufficient

information to understand the bases for Papst's infringement allegations or to identify all of the prior art that might be invalidating. To the extent Papst's Infringement Contentions are understandable, these Invalidity Contentions are based, at least in part, on Papst's constructions regarding claims 1, 2, 3, 5, 7, 11, 14 and 15 of U.S. Patent No. 6,470,399 ("the '399 patent"), claims 1, 2, 6, 7, 8, 9, 12, 13, 15, 16, 17 and 18 of U.S. Patent No. 6,895,449 ("the '449 patent"), and Papst's application of those constructions to the accused products. Papst did not provide any contentions suggesting that Nikon infringes other claims of these patents or any other patent. Consequently, in reliance thereon, Nikon has not separately addressed the other claims in the patents-in-suit.<sup>1</sup>

In addition, Nikon has not received all of the documents that may be relevant to its Supplemental Invalidity Contentions, and Papst has not produced all of the information responsive to Nikon's discovery requests. Nikon also has not had the opportunity to take the deposition of persons having potentially relevant information. The Defendants are in the process of issuing subpoenas to third parties believed to have knowledge, documentation, and/or corroborating evidence relating to invalidity and/or prior art. It is therefore likely that Nikon will discover additional prior art pertinent to the asserted claims of the asserted patents and Nikon reserves the right to supplement these Supplemental Invalidity Contentions within a reasonable time after becoming aware of additional prior art. Nikon reserves the right to introduce and use such supplemental materials at trial.

Further, Nikon has had little or no discovery concerning the alleged conception and reduction to practice by the named inventor of the subject matter of the patents-in-suit. Accordingly, Nikon does not presently have a basis for assessing the date(s) to which Papst might be entitled as an earliest conception date or the named inventor's diligence, if any, through reduction to practice. Nikon may seek documents from third parties in discovery that establish earlier dates of conception and reduction to practice, as appropriate, in order to demonstrate such

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<sup>1</sup> Nikon reserves the right to amend and/or supplement these Supplemental Invalidity Contentions, if necessary, due to any amendments Papst may make to its Asserted Claims and Infringement Contentions.

third parties' earlier dates of invention under 35 U.S.C. § 102(g). Nikon therefore reserves the right to supplement these Supplemental Invalidity Contentions with further documentation, if and when it becomes available, to support earlier dates of invention for prior art than what is argued by Papst to be the dates of invention for the asserted claims of the patents-in-suit.

Moreover, Nikon has had little or no discovery concerning the claimed priority date for each of the asserted claims. Nikon presently is examining the date(s) to which Papst might be entitled as an earliest priority date for each of the asserted claims. By way of example only, the original German patent application (filed March 4, 1997), to which the '399 and '449 patents claim priority, was changed in significant respects to become the PCT application (filed March 3, 1998) which lead to the '399 and '449 patents. Accordingly, certain claims of the '399 and '449 patents may have different priority dates because their supporting disclosures are impacted by these changes to the specification. For any such claims, references and products from different time periods may constitute invalidating prior art. Nikon further reserves its right to supplement, modify, and/or amend its Supplemental Invalidity Contentions and its identification and production of prior art in view of the Court's determination of the correct priority date for any of the asserted claims in this action.

Nikon also reserves its right to supplement, modify, and/or amend these Supplemental Invalidity Contentions after the Court has construed all relevant claim terms. Nikon's contentions concerning the validity of the asserted claims of the patents-in-suit may change based upon the Court's construction of the claims or positions that Papst may take concerning claim construction, infringement, or validity issues.

Nikon provides the information herein according to its understanding of Papst's interpretations of the asserted claims of the patents-in-suit, as set forth in Papst's Infringement Contentions. The information below and in the accompanying Exhibits is not in any way an admission regarding the scope of any claim asserted by Papst nor is it an admission as to the proper construction or interpretation of the asserted claims or any terms contained therein. Nikon reserves the right to supplement, modify and/or amend its Supplemental Invalidity

Contentions in view of any modifications or clarifications Papst may make to its proposed claim constructions or infringement contentions. Further, the production of documents that have been identified in these Supplemental Invalidity Contentions shall not be deemed an admission that such documents are admissible or that Nikon has waived any objections regarding the admissibility of such documents.

In the claim chart accompanying these Supplemental Invalidity Contentions, Nikon identifies specific portions of the prior art reference that discloses the elements of the asserted claims. Although Nikon has attempted to identify at least one citation per element for the reference, each and every disclosure of the same element in the reference is not necessarily identified. The lack of a citation for an element should not be deemed an admission that the element is not disclosed or is not inherent in the reference, as Nikon's investigation is ongoing. In an effort to focus the issues, Nikon identifies only exemplary portions of the cited reference. It should be recognized that persons of ordinary skill in the art generally read a prior art reference as a whole and in the context of other publications and literature. To understand and interpret any specific statement or disclosure within a prior art reference, such persons would rely on other information within the reference, along with other publications and their general scientific or engineering knowledge. Nikon consequently reserves the right to rely upon other unidentified portions of the prior art references and on other publications and expert testimony to provide context, and as aids to understanding and interpreting the portions that are identified. Nikon also reserves the right to rely on other portions of the prior art reference, other publications, and the testimony of experts to establish that a person of ordinary skill in the art would have been motivated to modify or combine certain of the cited reference so as to render the asserted claims obvious.

Certain limitations in the asserted claims may be disclosed in the prior art by the disclosure of certain characteristics. By way of example only, a disclosure in a prior art reference of an analog-to-digital converter indicates the presence of a sampling circuit that operates in conjunction with the analog-to-digital converter. As another example, a disclosure of

interface communication using only standard protocols (e.g., the SCSI protocol) may also constitute a disclosure of using only the standard communication drivers for that protocol. Nothing contained in these Supplemental Invalidity Contentions or any accompanying exhibits or claim charts should be understood or deemed to be an express or implied admission or contention with respect to any correlation between the limitations of the asserted claims and other characteristics of the subject matter in the prior art references.

Where Nikon identifies a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure and any text relating to the figure in addition to the figure itself. Similarly, where an identified portion of text refers to a figure, the identification should be understood to include the figure.

#### **IDENTIFICATION OF PRIOR ART**

For ease of reference and to avoid unnecessary duplication, Nikon incorporates, as if fully set forth herein, the prior art references identified in and invalidity charts attached to: (1) the Camera Manufacturers' Invalidity Contentions from June 18, 2008; (2) Nikon's Invalidity Contentions from June 30, 2008; and (3) Hewlett-Packard Co.'s Supplemental Invalidity Contentions from July 11, 2008. In addition, below are tables identifying additional items of prior art that, upon reasonable investigation, Nikon believes anticipate and/or render obvious each of the asserted claims of the patents-in-suit. Invalidity charts for this additional prior art are attached to these Supplemental Invalidity Contentions with an Exhibit number as indicated in the column titled "Invalidity Chart."

#### **Table I: United States Patent Prior Art**

Nikon incorporates by reference, as if fully set forth herein, the United States patent prior art references identified in Table I of: (1) the Camera Manufacturers' Invalidity Contentions from June 18, 2008; (2) Nikon's Invalidity Contentions from June 30, 2008; and (3) Hewlett-Packard Co.'s Supplemental Invalidity Contentions from July 11, 2008. Nikon also identifies the following United States patent prior art reference:

| US Patent No. | Title                                                                       | Inventor     | Filing Date for 102(e) purpose | Publication or Issue Date | Category of Prior Art | Invalidity Chart |
|---------------|-----------------------------------------------------------------------------|--------------|--------------------------------|---------------------------|-----------------------|------------------|
| 5,917,545     | Electronic Still Camera That Can Be Directly Inserted In An External Device | Kowno et al. | 8/27/1996                      | 6/29/1999                 | 102(e)                | A80              |

**Table II: Foreign Patent Prior Art**

Nikon incorporates by reference, as if fully set forth herein, the foreign patent prior art references identified in Table II of: (1) the Camera Manufacturers' Invalidity Contentions from June 18, 2008; (2) Nikon's Invalidity Contentions from June 30, 2008; and (3) Hewlett-Packard Co.'s Supplemental Invalidity Contentions from July 11, 2008.

**Table III: Non-Patent References**

Nikon incorporates by reference, as if fully set forth herein, the non-patent prior art references identified in Table III of: (1) the Camera Manufacturers' Invalidity Contentions from June 18, 2008; (2) Nikon's Invalidity Contentions from June 30, 2008; and (3) Hewlett-Packard Co.'s Supplemental Invalidity Contentions from July 11, 2008.

**Table IV: Prior Art Products**

Nikon incorporates by reference, as if fully set forth herein, the prior art product references identified in Table IV of: (1) the Camera Manufacturers' Invalidity Contentions from June 18, 2008; (2) Nikon's Invalidity Contentions from June 30, 2008; and (3) Hewlett-Packard Co.'s Supplemental Invalidity Contentions from July 11, 2008. Concurrent with the service of Nikon's Supplemental Invalidity Contentions, Nikon will produce to Papst the prior art identified in Invalidity Chart A80. Further, Nikon reserves the right to assert any of the items of prior art above under 35 U.S.C. § 102(g), specifically with respect to items of prior art where further investigation reveals that an author, inventor or engineer has evidence of an earlier date of invention than shown on the face of the reference or product. Nikon also incorporates the

Camera Manufacturers' production of prior art as and for Nikon's production.

### **INVALIDITY CHARTS**

Nikon incorporates by reference herein the invalidity charts attached as Exhibits A1 through A79 to: (1) the Camera Manufacturers' Invalidity Contentions from June 18, 2008; (2) Nikon's Invalidity Contentions from June 30, 2008; and (3) Hewlett-Packard Co.'s Supplemental Invalidity Contentions from July 11, 2008. In addition, attached to Nikon's Supplemental Invalidity Contentions is an invalidity chart marked as Exhibit A80 that contains exemplary portions of the prior art reference where each element of each asserted claim may be found. Nikon, however, maintains that a person of ordinary skill in the art of the patents-in-suit would determine what is described, disclosed, and taught by this prior art reference based on the entire reference. Nikon, therefore, reserves its right to rely on any and all portions of the prior art reference to establish invalidity under 35 U.S.C. §§ 102 and 103 in the present action.

Nikon reserves the right to rely on the public use, offer for sale, or sale of the devices described in the prior art references A1 through A80 once Nikon has an opportunity to take discovery of these subjects. To the extent that they are also prior art, Nikon reserves the right to rely upon foreign counterparts of U.S. patents identified and/or incorporated by reference into Nikon's Supplemental Invalidity Contentions; U.S. counterparts of foreign patents and foreign patent applications identified and/or incorporated by reference into Nikon's Supplemental Invalidity Contentions; and U.S. and foreign patents and patent applications corresponding to articles and publications identified and/or incorporated by reference into Nikon's Supplemental Invalidity Contentions. Prior art under 35 U.S.C. §§ 102(a), 102(b), and 102(e), as well as supporting documents for prior art under 35 U.S.C. §§ 102(a), 102(b), and 102(e) (which may themselves constitute independently invalidating prior art), are identified in the invalidity charts attached and/or incorporated by reference as Exhibits.

### **ANTICIPATION AND OBVIOUSNESS**

As shown in the invalidity charts attached and incorporated by reference herein, Nikon contends that the items of prior art listed and incorporated by reference in the preceding section anticipate, expressly or inherently, and/or render obvious one or more claims of the '399 and/or '449 patents. Alternatively, Nikon contends that each of the items of prior art listed and incorporated by reference in the preceding section renders the asserted claims of the '399 and/or '449 patents obvious, either alone or in combination with what was known to those of ordinary skill in the art at the time of the alleged invention of the subject matter claimed in the patents-in-suit.<sup>2</sup> In addition, Nikon contends that each of the asserted claims are obvious in light of the combined disclosures of any one or more of the references.

Nikon incorporates by reference, as if fully set forth herein, the bases for invalidity of the asserted claims of the patents-in-suit under 35 U.S.C. §§ 102 and 103 identified in: (1) the Camera Manufacturers' Invalidity Contentions from June 18, 2008; (2) Nikon's Invalidity Contentions from June 30, 2008; and (3) Hewlett-Packard Co.'s Supplemental Invalidity Contentions from July 11, 2008.

### **INVALIDITY UNDER 35 U.S.C. § 112**

#### **I. 35 U.S.C. § 112, ¶2: INDEFINITENESS**

Nikon incorporates by reference, as if fully set forth herein, the bases for invalidity of the asserted claims of the patents-in-suit for failure to comply with 35 U.S.C. § 112, ¶2 identified in: (1) the Camera Manufacturers' Invalidity Contentions from June 18, 2008; (2) Nikon's Invalidity Contentions from June 30, 2008; and (3) Hewlett-Packard Co.'s Supplemental Invalidity Contentions from July 11, 2008.

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<sup>2</sup> Nikon's contentions that the prior art identified and incorporated by reference into Nikon's Supplemental Invalidity Contentions render the asserted claims obvious under 35 U.S.C. § 103 are in no way an admission or suggestion that each reference does not independently anticipate the asserted claims under 35 U.S.C. § 102.

**II. 35 U.S.C. § 112, ¶1: INSUFFICIENT WRITTEN DESCRIPTION / ENABLEMENT**

Nikon incorporates by reference the bases for invalidity of the asserted claims of the patents-in-suit for failure to comply with 35 U.S.C. § 112, ¶1 identified in: (1) the Camera Manufacturers' Invalidity Contentions from June 18, 2008; (2) Nikon's Invalidity Contentions from June 30, 2008; and (3) Hewlett-Packard Co.'s Supplemental Invalidity Contentions from July 11, 2008.

Dated: July 23, 2008

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that on July 23, 2008, I electronically filed the foregoing with the Clerk of Court using the CM/ECF system which will send notification of such filing to all counsel of record at their e-mail address on file with the Court.

s/ Marc S. Blackman  
One of the Attorneys for Defendants  
Nikon Corporation and Nikon Inc.

# Exhibit A80

## PRIOR ART CLAIM CHART

| Code      | USP 6,470,399s Claim Language                                                                                                 | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                               |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A</b>  | <b>Independent Claim 1:</b><br>1. An interface device for communication between                                               | The '545 patent discloses an electronic still camera 101 that includes an interface device formed at least in part by a CPU processor 118, a digital signal processor, a memory 119, and a PC Card Connector 107. (7:15-57; 11:24-50; 13:4-66; 17:38-47; Fig. 3, Fig. 17)                                               |
| <b>B1</b> | a host device, which comprises drivers for input/output devices customary in a host device and a multi-purpose interface, and | The '545 patent discloses a host personal computer 102 having a multipurpose interface card slot 103. (6:56-64; Figs. 1-4, 17) The '545 patent also discloses that the host personal computer includes "PC card driver software which is normally incorporated in the personal computer [that] can be used." (12:21-29) |
| <b>C</b>  | a data transmit/receive device,                                                                                               | The '545 patent discloses an electronic still camera 101 having a CCD image sensor 114 and a phototaking lens 111. (6:51-7:57; Figs. 1-4)                                                                                                                                                                               |
| <b>C1</b> | the data transmit/receive device being arranged for providing analog data, comprising:                                        | The '545 patent discloses an electronic still camera 101 that has a CCD image sensor 114 for converting the light transmitted by the phototaking lens 111. The CCD 114 provides analog data. (7:40-43; 13:4-66; Fig. 3; Fig. 17)                                                                                        |
| <b>D</b>  | a processor;                                                                                                                  | The '545 patent discloses an electronic still camera 101 that has a CPU 118 and a digital signal processor. (7:40-57; 17:38-47; Fig. 3; Fig. 17)                                                                                                                                                                        |

## PRIOR ART CLAIM CHART

| Code | USP 6,470,399s Claim Language                                                                                                                 | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                    |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E    | a memory;                                                                                                                                     | The '545 patent discloses a memory device 119 composed for example of flash memory or static RAM (SRAM). (7:50-57; Fig. 3; Fig. 17)                                                                                                                                                                                          |
| F    | a first connecting device for interfacing the host device with the interface device via the multi-purpose interface of the host device; and   | The '545 patent discloses an electronic still camera 101 that has a first connecting device comprising a PC card connector 107, such as a PCMCIA card, that can be directly inserted into the PC card slot 103 of the host personal computer 102. (7:15-28; 9:66-10:10; 12:13-21)                                            |
| G    | a second connecting device for interfacing the interface device with the data transmit/receive device, the second connecting device including | The '545 patent discloses an electronic still camera 101 that includes a second connecting device that includes at least an analog to digital converter 115, and a sampling circuit. This circuit interfaces the analog data provided by the CCD image sensor 114 with the interface device. (7:43-49; 7:50-57; Figs. 3, 17) |
| G1   | a sampling circuit for sampling the analog data provided by the data transmit/receive device and                                              | The '545 patent discloses an electronic camera 101 having an A/D converter that includes a sampling circuit for sampling analog data. (7:43-49; 8:28-9:7; Fig. 3)                                                                                                                                                            |
| G2   | an analog-to-digital converter for converting data sampled by the sampling circuit into digital data,                                         | The '545 patent discloses an A/D converter circuit 115 for converting the output signal of the CCD 114 into digital data. (7:43-49; 9:8-40; 13:4-66; Fig. 3; Fig. 17)                                                                                                                                                        |

## PRIOR ART CLAIM CHART

| Code | USP 6,470,399s Claim Language                                              | U.S. Patent No. 5,917,545                                                                                                                                                                               |
|------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| H    | wherein the interface device is configured by the processor and the memory | The '545 patent discloses an electronic still camera 101 that includes an interface device that is configured to include a first command interpreter and a second command interpreter.<br>(10:12-12:29) |
| H1   | to include a first command interpreter and a second command interpreter,   | See below.                                                                                                                                                                                              |

## PRIOR ART CLAIM CHART

| Code | USP 6,470,399s Claim Language                                                                                                                                                                                                             | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I    | <p>wherein the first command interpreter is configured in such a way that the command interpreter, when receiving an inquiry from the host device as to a type of a device attached to the multi-purpose interface of the host device</p> | <p>The '545 patent discloses the PC card connector 107, such as PCMCIA Card, can be directly inserted into the PC card slot 103 of the host personal computer 102. (12:13-21) The '545 patent discloses that the PC Card interface circuit 120 effects protocol conversion between the memory device 119 and the PC Card interface, thereby enabling the communication between memory device 119 and the personal computer 102. (10:10-14) The '545 patent discloses that "since the PC card driver software which is normally incorporated in the personal computer can be used, the exclusive driver software required when the camera and the external equipment are connected with a communication cable is no longer needed. Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29) The '545 patent also discloses that the "embodiment shown in FIG. 3 employs the PC card interface circuit 120 as the interface means for communication with the external equipment, but, as another embodiment, the CPU 118 may also be used for such interface means." (10:66-11:3)</p> |

## PRIOR ART CLAIM CHART

| Code | USP 6,470,399s Claim Language                                                                                                                                   | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| J    | sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device | <p>The '545 patent discloses the PC card connector 107, such as PCMCIA Card, can be directly inserted into the PC card slot 103 of the host personal computer 102. (12:13-21) The '545 patent discloses that the PC Card interface circuit 120 effects protocol conversion between the memory device 119 and the PC Card interface, thereby enabling the communication between memory device 119 and the personal computer 102. (10:10-14) The '545 patent discloses that "since the PC card driver software which is normally incorporated in the personal computer can be used, the exclusive driver software required when the camera and the external equipment are connected with a communication cable is no longer needed. Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29) The '545 patent also discloses that the "embodiment shown in FIG. 3 employs the PC card interface circuit 120 as the interface means for communication with the external equipment, but, as another embodiment, the CPU 118 may also be used for such interface means." (10:66-11:3)</p> |
| K1   | which signals to the host device that it is an input/output device customary in a host device                                                                   | See above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## PRIOR ART CLAIM CHART

| Code | USP 6,470,399s Claim Language                                                                                                                              | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| L1   | <p>whereupon the host device communicates with the interface device by means of the driver for the input/output device customary in a host device, and</p> | <p>The '545 patent discloses the PC card connector 107, such as PCMCIA Card, can be directly inserted into the PC card slot 103 of the host personal computer 102. (12:13-21) The '545 patent discloses that the PC Card interface circuit 120 effects protocol conversion between the memory device 119 and the PC Card interface, thereby enabling the communication between memory device 119 and the personal computer 102. (10:10-14) The '545 patent discloses that "since the PC card driver software which is normally incorporated in the personal computer can be used, the exclusive driver software required when the camera and the external equipment are connected with a communication cable is no longer needed. Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29) The '545 patent also discloses that the "embodiment shown in FIG. 3 employs the PC card interface circuit 120 as the interface means for communication with the external equipment, but, as another embodiment, the CPU 118 may also be used for such interface means." (10:66-11:3)</p> |

## PRIOR ART CLAIM CHART

| Code      | USP 6,470,399s Claim Language                                                                                                                                                                                                                                                           | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>M</b>  | wherein the second command interpreter is configured to interpret a data request command from the host device to the type of input/output device signaled by the first command interpreter as a data transfer command for initiating a transfer of the digital data to the host device. | The '545 patent discloses that "in response to a command from computer 3, the CPU reads the images from the memory device 17 and sends the image signals to the computer 3." (19:9-12, 9:66-10:23). "Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29) |
| <b>A</b>  | <b>Independent claim 11:</b><br>11. An interface device for communication between                                                                                                                                                                                                       | See '399 Claim 1, row A.                                                                                                                                                                                                                                                                                                                                                                     |
| <b>B2</b> | a host device, which comprises a multi-purpose interface and a specific driver for this interface, and                                                                                                                                                                                  | The '545 patent discloses a host personal computer 102 having a multipurpose interface card slot 103. (6:56-64; 13:4-66; Figs. 1-4; Figs. 17) The '545 patent also discloses that the host personal computer includes "PC card driver software which is normally incorporated in the personal computer [that] can be used." (12:21-29)                                                       |
| <b>C</b>  | a data transmit/receive device                                                                                                                                                                                                                                                          | See '399 Claim 1, row C.                                                                                                                                                                                                                                                                                                                                                                     |
| <b>C1</b> | the data transmit/receive device being arranged for providing analog data, comprising:                                                                                                                                                                                                  | See '399 Claim 1, row C1.                                                                                                                                                                                                                                                                                                                                                                    |
| <b>D</b>  | a processor;                                                                                                                                                                                                                                                                            | See '399 Claim 1, row D.                                                                                                                                                                                                                                                                                                                                                                     |
| <b>E</b>  | a memory;                                                                                                                                                                                                                                                                               | See '399 Claim 1, row E.                                                                                                                                                                                                                                                                                                                                                                     |
| <b>F</b>  | a first connecting device for interfacing the host device with the interface device via the multi-purpose interface of the host device; and                                                                                                                                             | See '399 Claim 1, row F.                                                                                                                                                                                                                                                                                                                                                                     |
| <b>G</b>  | a second connecting device for interfacing the interface device with the data transmit/receive device, the second connecting device including                                                                                                                                           | See '399 Claim 1, row G.                                                                                                                                                                                                                                                                                                                                                                     |
| <b>G1</b> | a sampling circuit for sampling the analog data provided by the data transmit/receive device and                                                                                                                                                                                        | See '399 Claim 1, row G1.                                                                                                                                                                                                                                                                                                                                                                    |

## PRIOR ART CLAIM CHART

| Code      | USP 6,470,399s Claim Language                                                                                                                                                                                                                                                           | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>G2</b> | an analog-to-digital converter for converting data sampled by the sampling circuit into digital data,                                                                                                                                                                                   | See '399 Claim 1, row G2.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>H</b>  | where the interface device is configured using the processor and the memory                                                                                                                                                                                                             | See '399 Claim 1, row H.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>H1</b> | to include a first command interpreter and a second command interpreter,                                                                                                                                                                                                                | See '399 Claim 1, row H1.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>I</b>  | wherein the first command interpreter is configured in such a way that the interface device, when receiving an inquiry from the host device as to the type of a device attached at the multi-purpose interface of the host device                                                       | See '399 Claim 1, row I.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>J</b>  | sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device,                                                                                                                        | See '399 Claim 1, row J.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>K1</b> | which signals to the host device that it is an input/output device customary in a host device,                                                                                                                                                                                          | See '399 Claim 1, row K1.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>L3</b> | whereupon the host device communicates with the interface device by means of the specific driver for the multi-purpose interface, and                                                                                                                                                   | The '545 patent discloses that "since the PC card driver software which is normally incorporated in the personal computer can be used, the exclusive driver software required when the camera and the external equipment are connected with a communication cable is no longer needed. Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29) |
| <b>M</b>  | wherein the second command interpreter is configured to interpret a data request command from the host device to the type of input/output device signaled by the first command interpreter as a data transfer command for initiating a transfer of the digital data to the host device. | See '399 Claim 1, row M.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>A</b>  | <b>Independent Claim 14:</b><br>14. A method of communication between                                                                                                                                                                                                                   | See '399 Claim 1, row A.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## PRIOR ART CLAIM CHART

| Code      | USP 6,470,399s Claim Language                                                                                                                                                                                         | U.S. Patent No. 5,917,545 |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>B1</b> | a host device, which comprises drivers for input/output devices customary in a host device and a multi-purpose interface, and                                                                                         | See '399 Claim 1, row B.  |
| <b>C</b>  | a data transmit/receive device                                                                                                                                                                                        | See '399 Claim 1, row C.  |
| <b>C1</b> | the data transmit/receive device being arranged for providing analog data, via an interface device, comprising:                                                                                                       | See '399 Claim 1, row C1  |
| <b>F</b>  | interfacing of the host device with a first connecting device of the interface device via the multi-purpose interface of the host device;                                                                             | See '399 Claim 1, row F.  |
| <b>G</b>  | interfacing of the data transmit/receive device with a second connecting device of the interface device, the second connecting device including                                                                       | See '399 Claim 1, row G.  |
| <b>G1</b> | a sampling circuit for sampling the analog data provided by the data/transmit/receive device and                                                                                                                      | See '399 Claim 1, row G1. |
| <b>G2</b> | an analog-to-digital converter for converting data sampled by the sampling circuit into digital data;                                                                                                                 | See '399 Claim 1, row G2. |
| <b>I</b>  | inquiring by the host device at the interface device as to the type of device to which the multi-purpose interface of the host device is attached;                                                                    | See '399 Claim 1, row I.  |
| <b>J</b>  | regardless of the type of the data transmit/receive data attached to the second connecting device of the interface device, responding to the inquiry from the host device by the interface device                     | See '399 Claim 1, row J.  |
| <b>K1</b> | in such a way that it is an input/output device customary in a host device,                                                                                                                                           | See '399 Claim 1, row K1. |
| <b>L1</b> | whereupon the host device communicates with the interface device by means of the usual driver for the input/output device, and                                                                                        | See '399 Claim 1, row L1. |
| <b>M</b>  | interpreting a data request command from the host device to the type of input/output device customary in the host device as a data transfer command for initiating a transfer of the digital data to the host device. | See '399 Claim 1, row M.  |

## PRIOR ART CLAIM CHART

| Code       | USP 6,470,399s Claim Language                                                                                                                                                                                                                                                      | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>B*1</b> | <b>Dependent Claim 2:</b><br>2. An interface device according to claim 1, wherein the drivers for input/output drivers customary in a host device comprise a hard disk driver, and the signal indicates to the host device that the host device is communicating with a hard disk. | The '545 patent discloses that "since the PC card driver software which is normally incorporated in the personal computer can be used, the exclusive driver software required when the camera and the external equipment are connected with a communication cable is no longer needed. Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29) |
| <b>E*</b>  | <b>Dependent Claim 3:</b><br>3. An interface device according to claim 1, wherein the memory means comprises a buffer to buffer data to be transferred between the data transmit/receive device and the host device.                                                               | The '545 patent discloses an electronic still camera 101 that has data buffer. (11:4-10; 19:3-8)                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Z*</b>  | <b>Dependent Claim 4:</b><br>4. An interface device according to claim 1, wherein the multi-purpose interface of the host device is an SCSI interface and the first connecting device also comprises an SCSI interface.                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>D*</b>  | <b>Dependent Claim 5:</b><br>5. An interface device according to claim 1, wherein the processor is a digital signal processor.                                                                                                                                                     | The '545 patent discloses an electronic still camera 101 that has a digital signal processor. (17:38-46)                                                                                                                                                                                                                                                                                                                                                                       |
| <b>M*</b>  | <b>Dependent Claim 6:</b><br>6. An interface device according to claim 2, wherein the data to be transferred from the data transmit/receive device to the host device in the interface device is formatted in a suitable format for a hard disk present in the host device.        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## PRIOR ART CLAIM CHART

| Code | USP 6,470,399s Claim Language                                                                                                                                                                                                                                                                                                                | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N*1  | <b>Dependent Claim 7:</b><br>7. An interface device according to claim 2, which further comprises a root directory and virtual files which are present on the signaled hard disk drive and which can be accessed from the host device.                                                                                                       | The '545 patent discloses that the electronic still camera 101 includes a CPU 118 that writes data in a predetermined area of the memory device 119 in the DOS-FAT (disk operating system/file allocation table) format, so as to be utilizable by a personal computer employing the MS-DOS operating system. (9:55-60) The '545 patent also discloses that the host personal computer 102 can receive data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:26-29) |
| N*2  | <b>Dependent Claim 8:</b><br>8. An interface device according to claim 7, wherein the virtual files comprise a configuration file in text format which are stored in the memory means and using which the user can configure the interface device for a specific data transmit/receive device.                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| N*3  | <b>Dependent Claim 9:</b><br>9. An interface device according to claim 7, wherein the virtual files comprise batch files or executable files for the microprocessor means which are stored in the interface device in order to perform data processing, independently of the host device, of data received via the second connecting device. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| N*4  | <b>Dependent Claim 10:</b><br>10. An interface device according to claim 7, wherein the virtual files comprise batch files or executable files for the host device which are stored in the interface device.                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## PRIOR ART CLAIM CHART

| Code       | USP 6,470,399s Claim Language                                                                                                                                                                                                                                                                                                                                                                               | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>B*2</b> | <b>Dependent Claim 12:</b><br>12. An interface device according to claim 11, wherein in addition to the first connecting device of the interface device, there is a further input/output device at the multi-purpose interface of the host device, and wherein the interface device can communicate directly with said further input/output device via the specific driver for the multi-purpose interface. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Z*</b>  | <b>Dependent Claim 13:</b><br>13. An interface device according to claim 11, wherein the multi-purpose interface is an SCSI interface,                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>B*3</b> | and wherein the specific driver for the multi-purpose interface is an ASPI manager.                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>B*1</b> | <b>Dependent Claim 15:</b><br>15. A method according to claim 14, wherein the drivers for input/output devices customary in a host device comprise a driver for a storage device and in particular for a hard disk drive.                                                                                                                                                                                   | The '545 patent discloses that "since the PC card driver software which is normally incorporated in the personal computer can be used, the exclusive driver software required when the camera and the external equipment are connected with a communication cable is no longer needed. Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29) |

| Code      | USP 6,895,449s Claim Language                                                                                                 | U.S. Patent No. 5,917,545 |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>A</b>  | <b>Independent Claim 1:</b><br>1. An interface device for communication between                                               | See '399 Claim 1, row A.  |
| <b>B1</b> | a host device, which comprises drivers for input/output devices customary in a host device and a multi-purpose interface, and | See '399 Claim 1, row B1. |
| <b>C</b>  | a data transmit/receive device comprising the following features:                                                             | See '399 Claim 1, row C.  |

## PRIOR ART CLAIM CHART

| Code | USP 6,895,449s Claim Language                                                                                                                                                  | U.S. Patent No. 5,917,545 |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| D    | a processor;                                                                                                                                                                   | See '399 Claim 1, row D.  |
| E    | a memory;                                                                                                                                                                      | See '399 Claim 1, row E.  |
| F    | a first connecting device for interfacing the host device with the interface device via the multi-purpose interface of the host device; and                                    | See '399 Claim 1, row F.  |
| G    | a second connecting device for interfacing the interface device with the data transmit/receive device,                                                                         | See '399 Claim 1, row G.  |
| H    | wherein the interface device is configured by the processor and the memory                                                                                                     | See '399 Claim 1, row H.  |
| I    | in such a way that the interface device, when receiving an inquiry from the host device as to the type of a device attached to the multi-purpose interface of the host device, | See '399 Claim 1, row I.  |
| J    | sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device                | See '399 Claim 1, row J.  |

## PRIOR ART CLAIM CHART

| Code | USP 6,895,449s Claim Language                                                                                                                  | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| K2   | which signals to the host device that it is a storage device customary in a host device,                                                       | <p>The '545 patent discloses the PC card connector 107, such as PCMCIA Card, can be directly inserted into the PC card slot 103 of the host personal computer 102. (12:13-21) The '545 patent discloses that the PC Card interface circuit 120 effects protocol conversion between the memory device 119 and the PC Card interface, thereby enabling the communication between memory device 119 and the personal computer 102. (10:10-14) The '545 patent discloses that "since the PC card driver software which is normally incorporated in the personal computer can be used, the exclusive driver software required when the camera and the external equipment are connected with a communication cable is no longer needed. Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29) The '545 patent also discloses that the "embodiment shown in FIG. 3 employs the PC card interface circuit 120 as the interface means for communication with the external equipment, but, as another embodiment, the CPU 118 may also be used for such interface means." (10:66-11:3)</p> |
| L2   | whereupon the host device communicates with the interface device by means of the driver for the storage device customary in a host device, and | See above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## PRIOR ART CLAIM CHART

| Code | USP 6,895,449s Claim Language                                                                                                                                                  | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N1   | wherein the interface device is arranged for simulating a virtual file system to the host, the virtual file system including a directory structure.                            | The '545 patent discloses that the electronic still camera 101 includes a CPU 118 that writes data in a predetermined area of the memory device 119 in the DOS-FAT (disk operating system/file allocation table) format, so as to be utilizable by a personal computer employing the MS-DOS operating system. (9:55-60) The '545 patent also discloses that the host personal computer 102 can receive data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:26-29) |
| A    | <b>Independent claim 17:</b><br>17. An interface device for communication between                                                                                              | See '399 Claim 1, row A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| B2   | a host device, which comprises a multi-purpose interface and a specific driver for this interface,                                                                             | See '399 Claim 11, row B2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| C    | and a data transmit/receive device comprising the following features:                                                                                                          | See '399 Claim 1, row C.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| D    | a processor;                                                                                                                                                                   | See '399 Claim 1, row D.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| E    | a memory;                                                                                                                                                                      | See '399 Claim 1, row E.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| F    | a first connecting device for interfacing the host device with the interface device via the multi-purpose interface of the host device; and                                    | See '399 Claim 1, row F.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| G    | a second connecting device for interfacing the interface device with the data transmit/receive device,                                                                         | See '399 Claim 1, row G.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| H    | where the interface device is configured using the processor and the memory                                                                                                    | See '399 Claim 1, row H.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| I    | in such a way that the interface device, when receiving an inquiry from the host device as to the type of a device attached at the multi-purpose interface of the host device, | See '399 Claim 1, row I.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| J    | sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device                | See '399 Claim 1, row J.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## PRIOR ART CLAIM CHART

| Code | USP 6,895,449s Claim Language                                                                                                                                                   | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| K2   | which signals to the host device that it is a storage device customary in a host device,                                                                                        | See '449 Claim 1, row K2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| L3   | whereupon the host device communicates with the interface device by means of the specific driver for the multi-purpose interface, and                                           | See '449 Claim 1, row L2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| N2   | wherein the interface device is arranged for simulating a virtual file system to the host, the virtual file system including a file allocation table and a directory structure. | The '545 patent discloses that the electronic still camera 101 includes a CPU 118 that writes data in a predetermined area of the memory device 119 in the DOS-FAT (disk operating system/file allocation table) format, so as to be utilizable by a personal computer employing the MS-DOS operating system. (9:55-60) The '545 patent also discloses that the host personal computer 102 can receive data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:26-29) |

| Code | USP 6,895,449s Claim Language                                                                                                                      | U.S. Patent No. 5,917,545 |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| A    | <b>Independent Claim 18:</b><br>18. A method of communication between                                                                              | See '399 Claim 1, row A.  |
| B1   | a host device, which comprises drivers for input/output devices customary in a host device and a multi-purpose interface,                          | See '399 Claim 1, row B1. |
| C    | and a data transmit/receive device via an interface device comprising the following steps:                                                         | See '399 Claim 1, row C.  |
| F    | interfacing of the host device with a first connecting device of the interface device via the multi-purpose interface of the host device;          | See '399 Claim 1, row F.  |
| G    | interfacing of the data transmit/receive device with a second connecting device of the interface device;                                           | See '399 Claim 1, row G.  |
| I    | inquiring by the host device at the interface device as to the type of device to which the multi-purpose interface of the host device is attached; | See '399 Claim 1, row I.  |

## PRIOR ART CLAIM CHART

| Code | USP 6,895,449s Claim Language                                                                                                                                                                                                                                                                                                                                                                                                                              | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| J    | regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, responding to the inquiry from the host device by the interface device                                                                                                                                                                                                                                                        | See '399 Claim 1, row J.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| K2   | in such a way that it is a storage device customary in a host device,                                                                                                                                                                                                                                                                                                                                                                                      | See '449 Claim 1, row K2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| L2   | whereupon the host device communicates with the interface device by means of the usual driver for the storage device, and                                                                                                                                                                                                                                                                                                                                  | See '449 Claim 1, row L2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| N2   | wherein the interface device is arranged for simulating a virtual file system to the host, the virtual file system including a file allocation table and a directory structure.                                                                                                                                                                                                                                                                            | The '545 patent discloses that the electronic still camera 101 includes a CPU 118 that writes data in a predetermined area of the memory device 119 in the DOS-FAT (disk operating system/file allocation table) format, so as to be utilizable by a personal computer employing the MS-DOS operating system. (9:55-60) The '545 patent also discloses that the host personal computer 102 can receive data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:26-29) |
| N*5  | <b>Dependent Claim 2:</b><br>2. An interface device in accordance with claim 1, in which the directory structure has a configuration file for setting and controlling functions of the interface device or an executable or a batch file for conducting a routine stored in the memory or a data file used for transferring data from the data transmit/receive device to the host device or a help file for giving help on handling the interface device. | The '545 patent discloses that "in response to a command from computer 3, the CPU reads the images from the memory device 17 and sends the image signals to the computer 3." (19:9-12, 9:66-10:23) The '545 patent also discloses that the host personal computer 102 can receive data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:26-29)                                                                                                                      |

## PRIOR ART CLAIM CHART

| Code | USP 6,895,449s Claim Language                                                                                                                                                                                                                                                          | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N*2  | <b>Dependent Claim 3:</b><br>3. An interface device in accordance with claim 2 wherein the configuration file is a text file.                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| N*6  | <b>Dependent Claim 4:</b><br>4. An interface device in accordance with claim 2 wherein the executable file includes a Fast Fourier Transform routine for transforming data acquired by the second connecting device into the frequency domain and for examining frequency domain data. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| N*7  | <b>Dependent Claim 5:</b><br>5. An interface device in accordance with claim 2 wherein the executable file includes a data compression routine for compressing data to be transmitted from the data transmit/receive device to the host device.                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| N*8  | <b>Dependent Claim 6:</b><br>6. An interface device in accordance with claim 1 wherein, in response to a request from the host to read a boot sequence, the processor is arranged to send a virtual boot sequence to the host.                                                         | <p>The '545 patent discloses "data in a predetermined area of the memory device 17 in the DOS-FAT (disk operating system/file allocation table) format, so as to be utilizable by a personal computer employing the MS-DOS operating system" (18:21-25) and "the personal computer 3 makes access, through an unrepresented internal PC card interface (PC card controller), to the memory device 17 of the camera body 5, thereby reading the image signals stored in the memory device 17." (18:35-38) The '545 patent also discloses that the host personal computer 102 can receive data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:26-29)</p> |

## PRIOR ART CLAIM CHART

| Code | USP 6,895,449s Claim Language                                                                                                                                                                                                                                                                       | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N*9  | <p><b>Dependent Claim 7:</b></p> <p>7. An interface device in accordance with claim 6 wherein the virtual boot sequence includes a starting position and a length of a file allocation table, an indication of a type of the storage device or a number of sectors of the storage device.</p>       | <p>The '545 patent discloses writing "data in a predetermined area of the memory device 17 in the DOS-FAT (disk operating system/file allocation table) format, so as to be utilizable by a personal computer employing the MS-DOS operating system" (18:21-25) and "the personal computer 3 makes access, through an unrepresented internal PC card interface (PC card controller), to the memory device 17 of the camera body 5, thereby reading the image signals stored in the memory device 17." (18:35-38) "Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29)</p> |
| N*10 | <p><b>Dependent Claim 8:</b></p> <p>8. An interface device in accordance with claim 7 wherein, in response to a request from the host to display a directory of the storage device, a processor is arranged for transferring the file allocation table and the directory structure to the host.</p> | <p>The '545 patent discloses writing "data in a predetermined area of the memory device 17 in the DOS-FAT (disk operating system/file allocation table) format, so as to be utilizable by a personal computer employing the MS-DOS operating system" (18:21-25). The '545 patent discloses that "in response to a command from computer 3, the CPU reads the images from the memory device 17 and sends the image signals to the computer 3." (19:9-12, 9:66-10:23).</p>                                                                                                                                                                                                                                      |

## PRIOR ART CLAIM CHART

| Code | USP 6,895,449s Claim Language                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N*11 | <p><b>Dependent Claim 9:</b></p> <p>9. An interface device in accordance with claim 1 wherein the file allocation table and the directory structure is transferred to the host in response to a request from the host to read data from or store data to the storage device.</p>                                                                                                                                                                                                                                               | <p>The '545 patent discloses writing "data in a predetermined area of the memory device 17 in the DOS-FAT (disk operating system/file allocation table) format, so as to be utilizable by a personal computer employing the MS-DOS operating system" (18:21-25). The '545 patent discloses that "in response to a command from computer 3, the CPU reads the images from the memory device 17 and sends the image signals to the computer 3." (19:9-12, 9:66-10:23). "Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29)</p> |
| N*12 | <p><b>Dependent Claim 10:</b></p> <p>10. An interface device in accordance with claim 1 wherein the directory structure includes a data file for transferring data from the data transmit/receive device to the host device wherein the processor is arranged to interpret a request from the host to read the data file as a request for a data transfer from the data transmit/receive device to the host, so that data is transmitted from the second connecting device to the first connecting device and to the host.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| N*13 | <p><b>Dependent Claim 11:</b></p> <p>11. An interface device in accordance with claim 10 wherein the directory structure further includes a configuration file for specifying a time period for a measurement by the data transmit/receive device, wherein the interface device is arranged for simulating a length of the data file to the host that corresponds to an anticipated volume of data produced by the data transmit/receive device in the specified time period.</p>                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## PRIOR ART CLAIM CHART

| Code | USP 6,895,449s Claim Language                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N*14 | <p><b>Dependent Claim 12:</b></p> <p>12. An interface device in accordance with claim 1 wherein the file allocation table includes information on numbers of blocks occupied by the data file wherein the interface device is arranged for receiving block numbers or a block number range from the host when the host wants to read the data file, and wherein the interface device is arranged to start a data transfer to the host, when the block numbers or the block number range is received from the host.</p> | <p>The '545 patent discloses that "the CPU reads the image signals, compressed in the JPEG format, from the image compression circuit, and writes these data in a predetermined area of the memory device 17 in the DOS-FAT (disk operating system/file allocation table) format, so as to be utilizable by a personal computer employing the MS-DOS operating system" (18:19-25). The '545 patent discloses that "in response to a command from computer 3, the CPU reads the images from the memory device 17 and sends the image signals to the computer 3." (19:9-12, 9:66-10:23). "Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29)</p> |
| N*15 | <p><b>Dependent Claim 13:</b></p> <p>13. An interface device in accordance with claim 12 wherein the processor is arranged for formatting the data acquired by the second connecting device into blocks having a predetermined size, the predetermined size being suited for the storage device.</p>                                                                                                                                                                                                                   | <p>The '545 patent discloses that "the CPU reads the image signals, compressed in the JPEG format, from the image compression circuit, and writes these data in a predetermined area of the memory device 17 in the DOS-FAT (disk operating system/file allocation table) format, so as to be utilizable by a personal computer employing the MS-DOS operating system" (18:19-25). The '545 patent also discloses that the host personal computer 102 can receive data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:26-29)</p>                                                                                                                                                                     |

## PRIOR ART CLAIM CHART

| Code       | USP 6,895,449s Claim Language                                                                                                                                                                                                                                                                                     | U.S. Patent No. 5,917,545                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Y*</b>  | <b>Dependent Claim 14:</b><br>14. An interface device in accordance with claim 1 wherein the functions are gain, multiplex or synchronization settings of the second connecting device.                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>K2*</b> | <b>Dependent Claim 15:</b><br>15. An interface device in accordance with claim 1 wherein the storage device is a hard disk.                                                                                                                                                                                       | The '545 patent discloses that "since the PC card driver software which is normally incorporated in the personal computer can be used, the exclusive driver software required when the camera and the external equipment are connected with a communication cable is no longer needed. Consequently, the external equipment can read data from the electronic still camera, in the same manner as in the data reading from the flexible disk or the magnetic disk." (12:22-29) |
| <b>E*</b>  | <b>Dependent Claim 16:</b><br>16. An interface device in accordance with claim 1 wherein the memory has a data buffer for permitting independence in terms of time of the data transmit/receive device attachable to the second connecting device from the host device attachable to the first connecting device. | The '545 patent discloses an electronic still camera 101 that has data buffer. (11:4-10; 19:3-8)                                                                                                                                                                                                                                                                                                                                                                               |