

**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 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 Invalidity Contentions ("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 the entirety of the Camera Manufacturers' Invalidity Contentions from June 18, 2008, as if fully set forth herein. Nikon bases these 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, including on July 23, 2008 pursuant to the Court's June 17, 2008 Minute Order.

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.¹

In addition, Nikon has not received all of the documents that may be relevant to its 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 the named inventor of the '399 and '449 patents and/or other 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 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 third parties' earlier dates of invention under 35 U.S.C. § 102(g). Nikon therefore reserves the

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

right to supplement these 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 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 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 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 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 charts accompanying these Invalidity Contentions, Nikon identifies specific portions of prior art references that disclose the elements of the asserted claims. Although Nikon has attempted to identify at least one citation per element for each 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 cited references. 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 references, 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 references so as to render the 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 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 the prior art references identified in and invalidity charts attached to the Camera Manufacturers Invalidity Contentions submitted on June 18, 2008, as if fully set forth herein. 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 these additional items of prior art are attached to these 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 herein the United States patent prior art references identified in Table I of the Camera Manufacturers' Invalidity Contentions from June 18, 2008, as if fully set forth herein. 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
5,854,945	Bar Code Scanner With Keyboard Simulation	Criscito et al.	1/21/1997	12/29/1998	102(e)	A63

Table II: Foreign Patent Prior Art

Nikon incorporates by reference the foreign patent prior art references identified in Table II of the Camera Manufacturers' Invalidity Contentions from June 18, 2008, as if fully set forth herein.

Table III: Non-Patent References

Nikon incorporates by reference the non-patent prior art references identified in Table III of the Camera Manufacturers' Invalidity Contentions from June 18, 2008, as if fully set forth herein

Table IV: Prior Art Products

Nikon incorporates the prior art product references identified in Table IV of the Camera Manufacturers' Invalidity Contentions from June 18, 2008, as if fully set forth herein. Nikon also identifies the following prior art product:

Product	Date on Sale or Used in the US	Category of Prior Art	Invalidity Chart
Nikon E100 CoolPix Camera	At least as early as January 1997	102(b) 102(g)	A64

Concurrent with the service of Nikon's Invalidity Contentions, Nikon will produce to Papst the items of prior art identified in Invalidity Charts A63 and A64 to the extent not already in Papst's possession. To the extent any such item is not in English, Nikon will produce a certified English translation of the portion(s) relied upon. 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 A62 to the Camera Manufacturers' Invalidity Contentions served on June 18, 2008. In addition, attached to Nikon's Invalidity Contentions are invalidity charts marked as Exhibits A63 and A64 that contain exemplary portions of the prior art references 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 these publications based on the entire prior art reference. Nikon, therefore, reserve its right to rely on any and all portions of each 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 A64 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 in Nikon's Invalidity Contentions; U.S. counterparts of foreign patents and foreign patent applications identified and/or incorporated by reference in Nikon's Invalidity Contentions; and U.S. and foreign patents and patent applications corresponding to articles and publications identified and/or incorporated by reference in Nikon's 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.² 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 the bases for invalidity of the asserted claims of the patents-in-suit under 35 U.S.C. §§ 102 and 103 identified in the Camera Manufacturers' Invalidity Contentions from June 18, 2008, as if fully set forth herein.

INVALIDITY UNDER 35 U.S.C. § 112

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

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, ¶2 identified in the Camera Manufacturers' Invalidity Contentions from June 18, 2008, as if fully set forth herein. Nikon further states that claim 13 of the '449 patent is invalid for indefiniteness because it depends from claim 12 of the '449 patent, which itself is invalid for indefiniteness as set forth in the Camera Manufacturers' Invalidity Contentions. Moreover, Nikon states that claims 2, 6, 7, 8, 9, 12, 13, 15 and 16 of the '449 patent also are invalid for indefiniteness because they depend from claim 1 of the '449 patent, which itself is invalid for indefiniteness as set forth in the Camera Manufacturers' Invalidity Contentions.

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 the Camera Manufacturers' Invalidity Contentions from June 18, 2008, as if fully set forth herein.

² Nikon's contentions that the prior art identified and incorporated by reference in Nikon's 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.

Dated: June 30, 2008

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on June 30, 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.

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	U.S. Patent No. 5,854,945
A	Independent Claim 1: 1. An interface device for communication between	The '945 patent discloses a scanner 60 having an interface section 25a and a main scanner section 46. (5:36-62; 7:65-67; Fig. 6)
B1	a host device, which comprises drivers for input/output devices customary in a host device and a multi-purpose interface, and	The '945 patent discloses a host computer 20a with a multi-purpose input/output interface 24 and a driver for a keyboard. (3:33-67; 4:12-26; Fig. 6)
C	a data transmit/receive device,	The '945 patent discloses a scanner 60 having a main scanner section 46 and a bar code reader 54. (5:36-49; Fig. 6)
C1	the data transmit/receive device being arranged for providing analog data, comprising:	The '945 patent discloses a main scanner section 46 having a bar code reader 54 that reads analog data. (1:11-15; 5:43-49; Fig. 6)
D	a processor;	The '945 patent discloses a main scanner section 46 having a microcontroller 64. (5:36-49; Fig. 6)
E	a memory;	The '945 patent discloses memory, such as RAM and a data buffer. (1:63-66; 6:61-65; 9:8-11)
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 '945 patent discloses an input/output port 12 of the scanner 60 that interfaces with input/output port 24 of the host computer 20a. (5:9-13; 5:50-6:15; Fig. 6)

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	U.S. Patent No. 5,854,945
G	a second connecting device for interfacing the interface device with the data transmit/receive device, the second connecting device including	The '945 patent discloses a main scanner section 46 that interfaces the bar code reader 54 with the interface section 25a. (5:36-49; Fig. 6)
G1	a sampling circuit for sampling the analog data provided by the data transmit/receive device and	The '945 patent discloses a main scanner section 46 having a bar code reader 54 and a bar code scanning decoder 63. (1:11-15; 5:36-49; Fig. 6)
G2	an analog-to-digital converter for converting data sampled by the sampling circuit into digital data,	The '945 patent discloses a scanner 60 that converts bar code information into digital information. (1:11-15; 5:36-49; 8:15-18; Fig. 6)
H	wherein the interface device is configured by the processor and the memory	The '945 patent discloses an interface device that is configured by the processor and memory to include first and second command interpreters. (5:36-49; 6:28-33; 8:16-36; 8:53-9:7; Fig. 6)
H1	to include a first command interpreter and a second command interpreter,	See above.
I	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	The '945 patent discloses a host computer 20a that sends a signal to scanner 60. The scanner 60 communicates with the host computer 20a in the same way as a keyboard would communicate with the host computer 20a. (Abstract; 3:33-62; 4:12-17; 5:36-49; 6:28-33; 7:5-42; 8:16-36; 8:53-9:7; Fig. 6)

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	U.S. Patent No. 5,854,945
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	Same as above.
K1	which signals to the host device that it is an input/output device customary in a host device	Same as above.
L1	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	The '945 patent discloses a host computer 20a that communicates with the scanner 60. The '945 patent also discloses a software driver for a keyboard. (3:33-67; 4:12-26; Fig. 6)
M	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 '945 patent discloses a scanner 60 that responds to commands from the host computer 20a, such as a request-to-send command, and to transmit data to the host computer 20a. (4:1-27; 8:1-9; 9:11-33; Fig. 6)
A	Independent claim 11: 11. 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, and	The '945 patent discloses a host computer 20a having a multi-purpose input/output interface 24. The '945 patent also discloses a specific driver for the interface. (3:33-67; 4:12-26; Fig. 6)
C	a data transmit/receive device	See '399 Claim 1, row C.
C1	the data transmit/receive device being arranged for providing analog data, comprising:	See '399 Claim 1, row C1.
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.

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	U.S. Patent No. 5,854,945
G	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.
G1	a sampling circuit for sampling the analog data provided by the data transmit/receive device and	See '399 Claim 1, row G1.
G2	an analog-to-digital converter for converting data sampled by the sampling circuit into digital data,	See '399 Claim 1, row G2.
H	where the interface device is configured using the processor and the memory	See '399 Claim 1, row H.
H1	to include a first command interpreter and a second command interpreter,	See '399 Claim 1, row H1.
I	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.
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.
K1	which signals to the host device that it is an input/output device customary in a host device,	See '399 Claim 1, row K1.
L3	whereupon the host device communicates with the interface device by means of the specific driver for the multi-purpose interface, and	The '945 patent discloses a host computer 20a that communicates with scanner 60. The '945 patent also discloses a specific driver for the multi-purpose interface. (3:33-67; 4:12-26; Fig. 6)
M	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.
A	Independent Claim 14: 14. 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, and	See '399 Claim 1, row B.

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	U.S. Patent No. 5,854,945
C	a data transmit/receive device	See '399 Claim 1, row C.
C1	the data transmit/receive device being arranged for providing analog data, via an interface device, comprising:	See '399 Claim 1, row C1
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, the second connecting device including	See '399 Claim 1, row G.
G1	a sampling circuit for sampling the analog data provided by the data/transmit/receive device and	See '399 Claim 1, row G1.
G2	an analog-to-digital converter for converting data sampled by the sampling circuit into digital data;	See '399 Claim 1, row G2.
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.
J	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.
K1	in such a way that it is an input/output device customary in a host device,	See '399 Claim 1, row K1.
L1	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.
M	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.
B*1	Dependent Claim 2: 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.	

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	U.S. Patent No. 5,854,945
E*	Dependent Claim 3: 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 '945 patent discloses a scanner 60 having a data buffer that stores data that is ready to be sent to the host computer. (1:63-66; 9:8-11)
Z*	Dependent Claim 4: 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.	
D*	Dependent Claim 5: 5. An interface device according to claim 1, wherein the processor is a digital signal processor.	The '945 patent discloses a main scanner section 60 having a signal processor. (5:36-49; 10:17-44; Fig. 6)
M*	Dependent Claim 6: 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.	
N*1	Dependent Claim 7: 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.	
N*2	Dependent Claim 8: 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	Dependent Claim 9: 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.	

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	U.S. Patent No. 5,854,945
N*4	Dependent Claim 10: 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.	
B*2	Dependent Claim 12: 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.	
Z*	Dependent Claim 13: 13. An interface device according to claim 11, wherein the multi-purpose interface is an SCSI interface,	
B*3	and wherein the specific driver for the multi-purpose interface is an ASPI manager.	
B*1	Dependent Claim 15: 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.	

Code	USP 6,895,449s Claim Language	U.S. Patent No. 5,854,945
A	Independent Claim 1: 1. An interface device for 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, and	See '399 Claim 1, row B1.
C	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.

PRIOR ART CLAIM CHART

Code	USP 6,895,449s Claim Language	U.S. Patent No. 5,854,945
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.
K2	which signals to the host device that it is a storage device customary in a host device,	
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	
N1	wherein the interface device is arranged for simulating a virtual file system to the host, the virtual file system including a directory structure.	
A	Independent claim 17: 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.

PRIOR ART CLAIM CHART

Code	USP 6,895,449s Claim Language	U.S. Patent No. 5,854,945
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.
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.	

Code	USP 6,895,449s Claim Language	U.S. Patent No. 5,854,945
A	Independent Claim 18: 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. 5,854,945
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.	
N*5	Dependent Claim 2: 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.	
N*2	Dependent Claim 3: 3. An interface device in accordance with claim 2 wherein the configuration file is a text file.	
N*6	Dependent Claim 4: 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	Dependent Claim 5: 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.	

PRIOR ART CLAIM CHART

Code	USP 6,895,449s Claim Language	U.S. Patent No. 5,854,945
N*8	Dependent Claim 6: 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.	
N*9	Dependent Claim 7: 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.	
N*10	Dependent Claim 8: 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.	
N*11	Dependent Claim 9: 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.	
N*12	Dependent Claim 10: 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.	

PRIOR ART CLAIM CHART

Code	USP 6,895,449s Claim Language	U.S. Patent No. 5,854,945
N*13	Dependent Claim 11: 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.	
N*14	Dependent Claim 12: 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.	
N*15	Dependent Claim 13: 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.	The '945 patent discloses a scanner 60 that formats and stores data in 11 bit blocks. (8:59-62)
Y*	Dependent Claim 14: 14. An interface device in accordance with claim 1 wherein the functions are gain, multiplex or synchronization settings of the second connecting device.	
K2*	Dependent Claim 15: 15. An interface device in accordance with claim 1 wherein the storage device is a hard disk.	

PRIOR ART CLAIM CHART

Code	USP 6,895,449s Claim Language	U.S. Patent No. 5,854,945
E*	Dependent Claim 16: 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 '945 patent discloses a main scanner section 46 having a data buffer that stores data that is ready to be sent to the host computer 20a. (1:63-66; 9:8-11)

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	NIKON E100
A	Independent Claim 1: 1. An interface device for communication between	The E100 camera includes an interface device that is formed at least in part by a processor and memory.
B1	a host device, which comprises drivers for input/output devices customary in a host device and a multi-purpose interface, and	The E100 camera can be connected to a PC that utilizes drivers for a variety of input/output devices, such as drivers for ATA disk drives, and that has a multipurpose PCMCIA interface.
C	a data transmit/receive device,	The E100 camera includes a lens unit and a CCD.
C1	the data transmit/receive device being arranged for providing analog data, comprising:	The lens unit and CCD of the E100 camera provide analog data.
D	a processor;	The E100 camera includes a processor, including a CPU and a digital signal processor.
E	a memory;	The E100 includes memory, including flash memory and DRAM.
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 E100 camera includes a first connecting device comprising a PCMCIA card circuit for interfacing the interface device with a multipurpose PCMCIA interface on a PC.
G	a second connecting device for interfacing the interface device with the data transmit/receive device, the second connecting device including	The E100 camera includes a second connecting device comprising a sampling circuit and an analog to digital converter. This circuitry interfaces analog data provided by the CCD image sensor with the interface device. The E100 includes a Correlated Double Sampler (CDS).

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	NIKON E100
G1	a sampling circuit for sampling the analog data provided by the data transmit/receive device and	The E100 camera includes a sampling circuit, such as a Correlated Double Sampler (CDS), for sampling the analog data provided by the CCD image sensor.
G2	an analog-to-digital converter for converting data sampled by the sampling circuit into digital data,	The E100 camera includes an analog-to digital converter (A/D converter) that converts analog data supplied by the CDS into digital data.
H	wherein the interface device is configured by the processor and the memory	The E100 camera includes an interface device that is configured by the processor and memory to include first and second command interpreters.
H1	to include a first command interpreter and a second command interpreter,	See above.
I	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	When the E100 camera is plugged in to a PCMCIA socket on a PC, the PC sends a signal to the E100 camera to determine at least the type of device attached to the multipurpose PCMCIA interface of the PC. This signal is an inquiry from the PC.
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	The E100 camera sends a signal to the PC, regardless of the type of data transmit/receive device attached to the interface device, that the E100 camera is a disk drive.
K1	which signals to the host device that it is an input/output device customary in a host device	See above.
L1	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	Upon receiving information that the E100 camera is a disk drive, the PC communicates with the interface device of the E100 camera by a software driver for disk drives, such as a driver for an ATA disk drive.

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	NIKON E100
M	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 second command interpreter of the E100 camera is configured to interpret data request commands for disk drives. For example, the second command interpreter is configured to interpret ATA commands. The second command interpreter, for example, interprets the READ SECTOR(S) command (operation code 20h). The E100 camera interprets such data request commands and provides the requested digital data to the PC.
A	Independent claim 11: 11. 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, and	The E100 camera can be connected to a PC that has a multipurpose PCMCIA interface and a specific driver for the multipurpose PCMCIA interface.
C	a data transmit/receive device	See '399 Claim 1, row C.
C1	the data transmit/receive device being arranged for providing analog data, comprising:	See '399 Claim 1, row C1.
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, the second connecting device including	See '399 Claim 1, row G.
G1	a sampling circuit for sampling the analog data provided by the data transmit/receive device and	See '399 Claim 1, row G1.
G2	an analog-to-digital converter for converting data sampled by the sampling circuit into digital data,	See '399 Claim 1, row G2.
H	where the interface device is configured using the processor and the memory	See '399 Claim 1, row H.
H1	to include a first command interpreter and a second command interpreter,	See '399 Claim 1, row H1.

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	NIKON E100
I	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.
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.
K1	which signals to the host device that it is an input/output device customary in a host device,	See '399 Claim 1, row K1.
L3	whereupon the host device communicates with the interface device by means of the specific driver for the multi-purpose interface, and	The PC communicates with the interface device by a specific driver for the multipurpose PCMCIA interface.
M	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.
A	Independent Claim 14: 14. 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, and	See '399 Claim 1, row B.
C	a data transmit/receive device	See '399 Claim 1, row C.
C1	the data transmit/receive device being arranged for providing analog data, via an interface device, comprising:	See '399 Claim 1, row C1
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, the second connecting device including	See '399 Claim 1, row G.
G1	a sampling circuit for sampling the analog data provided by the data/transmit/receive device and	See '399 Claim 1, row G1.
G2	an analog-to-digital converter for converting data sampled by the sampling circuit into digital data;	See '399 Claim 1, row G2.

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	NIKON E100
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.
J	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.
K1	in such a way that it is an input/output device customary in a host device,	See '399 Claim 1, row K1.
L1	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.
M	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.
B*1	Dependent Claim 2: 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 PC includes a hard disk driver, such as a driver for an ATA disk drive. The PC receives a signal from the E100 camera that signals to the PC that the E100 camera is a disk drive.
E*	Dependent Claim 3: 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 E100 camera includes memory, including flash memory and DRAM, that buffers data acquired by the data transmit/receive device until it is transferred to the PC.
Z*	Dependent Claim 4: 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.	
D*	Dependent Claim 5: 5. An interface device according to claim 1, wherein the processor is a digital signal processor.	The E100 camera includes a digital signal processor.

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	NIKON E100
M*	Dependent Claim 6: 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.	
N*1	Dependent Claim 7: 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 E100 camera has a root directory and stores files that can be accessed by the PC.
N*2	Dependent Claim 8: 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	Dependent Claim 9: 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	Dependent Claim 10: 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.	
B*2	Dependent Claim 12: 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.	

PRIOR ART CLAIM CHART

Code	USP 6,470,399s Claim Language	NIKON E100
Z*	Dependent Claim 13: 13. An interface device according to claim 11, wherein the multi-purpose interface is an SCSI interface,	
B*3	and wherein the specific driver for the multi-purpose interface is an ASPI manager.	
B*1	Dependent Claim 15: 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 PC includes a driver for a hard disk drive, such as a driver for an ATA disk drive.

Code	USP 6,895,449s Claim Language	NIKON E100
A	Independent Claim 1: 1. An interface device for 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, and	See '399 Claim 1, row B1.
C	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	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	NIKON E100
K2	which signals to the host device that it is a storage device customary in a host device,	The E100 camera sends a signal to the PC, regardless of the type of data transmit/receive device attached to the interface device, that the E100 camera is a disk drive.
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	Upon receiving information that the E100 camera is a disk drive, the PC communicates with the interface device of the E100 camera by a software driver for disk drives, such as a driver for an ATA disk drive.
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 interface device of the E100 camera simulates a virtual file system, including simulating a master boot record, a boot sector and a sequence of sectors comprising at least one file allocation table, at least one directory, and files, as would be found on a disk drive having rotating media.
A	Independent claim 17: 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.

PRIOR ART CLAIM CHART

Code	USP 6,895,449s Claim Language	NIKON E100
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.
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 interface device of the E100 camera simulates a virtual file system, including simulating a master boot record, a boot sector and a sequence of sectors comprising at least one file allocation table, at least one directory, and files, as would be found on a disk drive having rotating media.

Code	USP 6,895,449s Claim Language	NIKON E100
A	Independent Claim 18: 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	NIKON E100
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 interface device of the E100 camera simulates a virtual file system, including simulating a master boot record, a boot sector and a sequence of sectors comprising at least one file allocation table, at least one directory, and files, as would be found on a disk drive having rotating media.
N*5	Dependent Claim 2: 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 E100 camera may include configuration files and files used to transfer data from the data transmit/receive device to the PC.
N*2	Dependent Claim 3: 3. An interface device in accordance with claim 2 wherein the configuration file is a text file.	
N*6	Dependent Claim 4: 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.	

PRIOR ART CLAIM CHART

Code	USP 6,895,449s Claim Language	NIKON E100
N*7	Dependent Claim 5: 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	Dependent Claim 6: 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.	In response to a request from the PC to read the first sector on the simulated disk drive, the processor of the E100 camera is arranged to send a virtual boot sequence to the PC. For example, in response to the request for the first sector, the E100 camera provides 512 bytes of data which contain information typically found in a master boot record, including information for at least one partition.
N*9	Dependent Claim 7: 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.	The E100 camera provides the PC with a boot sequence including a master boot record and a boot sector, which includes a starting location and the length of a file allocation table.
N*10	Dependent Claim 8: 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.	In response to a request from the PC to display a directory, the E100 camera provides the PC with a file allocation table and a directory structure.
N*11	Dependent Claim 9: 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.	In response to a request from the PC to read or store data, the E100 camera provides the PC with a file allocation table and a directory structure.

PRIOR ART CLAIM CHART

Code	USP 6,895,449s Claim Language	NIKON E100
N*12	Dependent Claim 10: 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.	
N*13	Dependent Claim 11: 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.	
N*14	Dependent Claim 12: 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.	The E100 camera includes a file allocation table. The number of the first cluster of a file is in the directory. The READ SECTOR(S) command supports reading a single logical block address comprising a single 512 byte sector, or a starting logical block address plus a transfer length comprising a range of blocks of data.
N*15	Dependent Claim 13: 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.	The E100 camera includes a processor that formats digital data into 512 byte blocks.

PRIOR ART CLAIM CHART

Code	USP 6,895,449s Claim Language	NIKON E100
Y*	Dependent Claim 14: 14. An interface device in accordance with claim 1 wherein the functions are gain, multiplex or synchronization settings of the second connecting device.	
K2*	Dependent Claim 15: 15. An interface device in accordance with claim 1 wherein the storage device is a hard disk.	The E100 camera sends a signal to the PC that the E100 camera is a disk drive.
E*	Dependent Claim 16: 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 E100 camera includes memory, including flash memory and DRAM, that permits time independence from when a photograph is captured and when it is transferred to the PC.