

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.
Petitioner

v.

MAXELL, LTD.
Patent Owner

Case No. IPR2020-00200
U.S. Patent No. 10,084,991

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,084,991**

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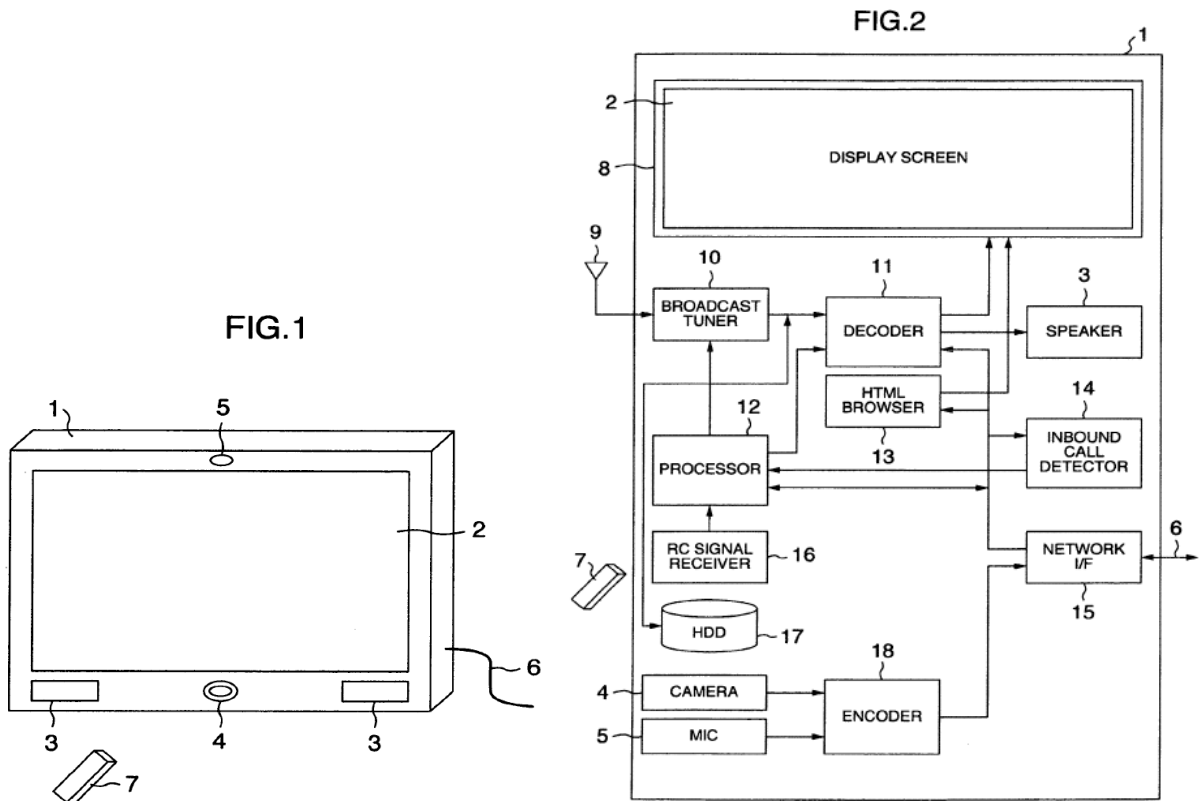
I. INTRODUCTION

Petitioner Apple Inc. requests *Inter Partes* Review of claims 1-5 and 8-12 (collectively, the “Challenged Claims”) of USPN 10,084,991 assigned to Maxell, Ltd. ’991 Patent (Ex. 1001). The purportedly distinguishing feature of the Challenged Claims is a TV receiver including videophone function capabilities for performing videocalls with another videophone function-added TV receiver. ’991 Patent, 2:32-48. But, adding videophone functionality to a TV receiver was well known before the priority date of the ’991 Patent, and the Challenged Claims are obvious over the prior art as detailed herein. Accordingly, IPR of the Challenged Claims should be instituted.

II. SUMMARY OF THE ’991 PATENT

A. Description of the Alleged Invention of the ’991 Patent

The ’991 Patent describes a TV receiver for receiving both digital broadcast programs and video-on-demand (VOD) programs, where the TV receiver includes videophone functionality for making videocalls over a network to “another similar videophone function-added TV receiver of a distant party.” ’991 Patent, Abstract, 2:32-48, 7:32-39, 7:52-61, 8:44–9:7.



'991 Patent, Figs. 1 and 2. The videophone function-added TV receiver 1 includes a processor 12, a camera 4, a microphone 5, a display screen 2, and a network interface 15. '991 Patent, 7:35-39, 8:23-35, Figs. 1-2. A user can select from a mode of operation, including a TV program viewing function mode, a videophone function mode, and a VOD function mode. '991 Patent, 9:8-24. VOD services are available for download from VOD server 21. '991 Patent, 7:52-57, 10:6-12, Fig. 3; Dec. 49-51.¹

¹ All citations to "Dec." are to paragraph numbers in Ex. 1003, Declaration of Dr. Andrew Lippman.

Upon detecting an incoming phone call, the processor renders the camera and microphone operative “to thereby set up the videophone function mode, resulting in setup of the state that enables videophone communication with the other-side videophone function-added TV receiver 1.” *'991 Patent*, 13:47-55. If the TV receiver is in either of a TV watching mode or a VOD contents watching mode when an incoming phone call is detected, the processor pauses the viewed video program and switches to the videophone function mode. *'991 Patent*, 17:39-54, 18:21-35. The processor also begins storing the viewed video program so that the user may start watching the program from the point the program was paused when the videophone call began. *'991 Patent*, 18:3-20, 18:47-57.

B. Priority Date of the Challenged Claims

U.S. Patent Application No. 15/837,402 (“the ’991 Application”), from which the ’991 Patent issued, was filed on September 25, 2018. The ’991 Application in turn claimed priority to JP 2008-246232, which was filed on September 25, 2008. *'991 Patent*, (21), (22), (30).

For purposes of this Petition, Apple applies September 25, 2008, as the priority date for the Challenged Claims. The prior art references relied upon in the proposed grounds below are either §§ 102(a) or 102(e), assuming this priority date.

C. Summary of Unpatentability of the Challenged Claims

The purported invention of the '991 Patent of adding videophone functionality to a TV receiver was well known prior to the '991 Patent's priority date. U.S. Patent No. 7,565,680 (*Asmussen*, Ex. 1004) teaches a set top terminal 220 for use at a subscriber's home and for operation in a cable television program delivery system 200. *Asmussen*, 3:21-30, 6:48-60, 7:4-7, 7:34-39, 11:1-9. The set top terminal (STT) is configured to receive video programs from an operations center, where "video programs" is defined to include broadcast and cable television signal transmissions and video streaming over the Internet or other network. *Asmussen*, 4:20-25, 7:35-37, 23:35-63.

Similar to the videophone function-added TV receiver of the '991 Patent, the *Asmussen* STT includes a camera and microphone and the added functionality of making videophone calls with other users with similar set top terminals: "Such features include the *capability to send and receive video calls through the set top terminal equipped with a camera and microphone*. The video call can be communicated through the cable television delivery system or other communications networks." *Asmussen*, 4:5-9,² Abstract, 49:41-56. Also similar to the '991 Patent, *Asmussen* teaches STT in combination with the display is configured

² All emphases added unless otherwise stated.

to pause the viewed video program upon receipt of an inbound videophone call notice. *Asmussen*, 4:10-20, 43:18-22.

D. Level of Skill of a POSITA

A POSITA at the time of the '991 Patent—which, for purposes of this Petition is September 25, 2008—would have had a Bachelor's degree in Electrical Engineering, Computer Engineering, or Computer Science, or an equivalent degree with at least two years of experience in digital video systems and networking, human-computer interaction, or related technologies. Additional education may substitute for lesser work experience and vice-versa. (*Dec.* 32).

E. Opinions of a POSITA

Petitioner submits Exhibit 1003, Declaration of Dr. Andrew Lippman, as evidence supporting its arguments. A proper unpatentability analysis entails considering Dr. Lippman's reasonable understanding or appreciation of the discussed references. *Eli Lilly and Co. v. Los Angeles Biomedical Research Inst.*, 849 F.3d 1073, 1074-75 (Fed. Cir. 2017); *Valeo North America, Inc. v. Magna Elec., Inc.*, IPR2015-00251, Paper 18 at 18 (PTAB May 26, 2016); MPEP 2112 ("The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103."). Dr. Lippman's understanding of what would be understood from a reference as of the '991 Patent's priority date should be considered.

III. THE BOARD'S DISCRETION UNDER 35 U.S.C. § 314(a)

While there is a parallel district court proceeding involving the '991 Patent, no preliminary injunction motion has been filed, the district court has not been presented with or invested any time in the analysis of prior art invalidity issues, and no *Markman* hearing has been held. (Ex. 1009, *Maxell v. Apple* Docket Control Order). Apple also timely filed this Petition within the statutorily prescribed 1-year window. Declining to institute IPR here in view of the co-pending district court litigation would essentially render nugatory the 1-year filing period of § 315(b). Notably, § 315(b) originally contained only a 6-month filing window, which was amended to 1-year prior to passage of the America Invents Act to “afford defendants a reasonable opportunity to identify and understand the patent claims that are relevant to the litigation” before having to file an IPR petition. 157 Cong. Rec. S5429 (daily ed. Sept. 8, 2011) (statement of Sen. Kyl). Moreover, making the status of the district court litigation a threshold consideration before institution also ignores the common scenario, contemplated by Congress, of obtaining a district court stay based on institution. *Cf.* 157 Cong. Rec. S1363 (daily ed. Mar. 8, 2011) (statement of Sen. Chuck Schumer); H. Rep. No. 112-98, Part I, at 48 (2011). For these reasons, and those explained below, the instant Petition should be instituted.

IV. REQUIREMENTS FOR IPR UNDER 37 C.F.R. § 42.104

A. Grounds for Standing Under 37 C.F.R. § 42.104(a)

Apple certifies the '991 Patent is available for IPR and Apple is not barred or estopped from requesting IPR challenging the claims of the '991 Patent. Apple is not the owner of the '991 Patent, has not filed a civil action challenging the validity of any claim of the '991 Patent, and this Petition is not filed more than one year after Apple was served with a complaint alleging infringement of the '991 Patent.

B. Identification of Challenge Under 37 C.F.R. § 42.104(b) and Relief Requested

In view of the prior art and evidence presented, the Challenged Claims of the '991 Patent are unpatentable and should be cancelled. 37 C.F.R. § 42.104(b)(1). Based on the prior art references identified below, IPR of the Challenged Claims should be granted. 37 C.F.R. § 42.104(b)(2).

Proposed Grounds of Unpatentability
<u>Ground 1:</u> Claims 1 and 8 are obvious under § 103(a) over <i>Asmussen</i> (Ex. 1004) in view of <i>Bear</i> (Ex. 1005)
<u>Ground 2:</u> Claims 1-5 and 8-12 are obvious under § 103(a) over <i>Asmussen</i> in view of <i>Bear</i> and further in view of <i>Marley</i> (Ex. 1006)
<u>Ground 3:</u> Claims 5 and 12 are obvious under § 103(a) over <i>Asmussen</i> in view of <i>Bear</i> and <i>Marley</i> and further in view of <i>DeFazio</i> (Ex. 1007)
<u>Ground 4:</u> Claims 1 and 8 are obvious under § 103(a) over <i>Asmussen</i> in view of <i>Bear</i> in further view of <i>Lindstrom</i> (Ex. 1008)
<u>Ground 5:</u> Claims 1-5 and 8-12 are obvious under § 103(a) over <i>Asmussen</i> in view of <i>Bear</i> and <i>Lindstrom</i> in further view of <i>Marley</i>
<u>Ground 6:</u> Claims 5 and 12 are obvious under § 103(a) over <i>Asmussen</i> in view of <i>Bear</i> , <i>Lindstrom</i> , and <i>Marley</i> in further view of <i>DeFazio</i>

Sections VI-XI identify where each element of the Challenged Claims is found in the prior art. 37 C.F.R. § 42.104(b)(4). The exhibit numbers of the supporting evidence relied upon to support the challenges are provided above and the relevance of the evidence to the challenges raised are provided in Sections VI-XI. 37 C.F.R. § 42.104(b)(5). Exhibits 1001–1018 are also attached.

C. Claim Construction Under 37 C.F.R. § 42.104(b)(3)

In this proceeding, claims are interpreted under the same standard applied by Article III courts (i.e., the *Phillips* standard). See 37 C.F.R. § 42.100(b); 83 Fed. Reg. 197 (Oct. 11, 2018); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005)

(*en banc*). Under this standard, words in a claim are given their ordinary and customary meaning, which is the meaning understood by a person of ordinary skill in the art in view of the patent and file history. *Phillips*, 415 F.3d at 1312-13. Dictionaries or other extrinsic sources may assist in determining the plain and ordinary meaning but cannot override a meaning that is unambiguous from the intrinsic evidence. *Id.*

1. All Claims: “communication apparatus”

A proper construction for “communication apparatus” is a “videophone function-added TV receiver.” The ’991 Patent repeatedly (over 280 times, excluding the claims) references the described system as a “videophone function-added TV receiver.” ’991 Patent, *passim*, exemplary pinpoints at Abstract, 7:32-39, 8:36-50. The ’991 Patent describes the need for the purported invention as a “new and improved TV receiver with TV function (referred to as a videophone function-added TV receiver hereafter) set having videophone call handing functionality....” ’991 Patent, 2:32-48. The ’991 Patent begins describing the purported invention by referring to Fig. 1 as “a diagram showing a perspective view of exterior appearance of a television (TV) receiver set with additional video telephone functionality in accordance with a first embodiment. The videophone function-added TV receiver is designated by a reference numeral 1....” ’991 Patent, 7:32-39. Therefore, the ’991

Patent repeatedly and exclusively identifies the purported invention as a “videophone function-added TV receiver.”

Federal Circuit precedent supports Petitioner Apple’s construction. In *GPNE Corp. v. Apple Inc.*, GPNE asserted two patents claiming nodes in data networks. *GPNE Corp. v. Apple Inc.*, 830 F.3d 1365, 1370-71 (Fed. Cir. 2016). The term “node” appeared only in the claims and in the abstract. *Id.* By contrast, the alleged invention was repeatedly referred to in the specification (over 200 times) as “pagers” or “pager units.” *Id.* In affirming the district court’s construction of “node” as “pager” (*see* pinpoint at 830 F.3d at 1370 for full claim construction), the Federal Circuit stated:

We have recognized that when a patent ‘repeatedly and consistently’ characterizes a claim term in a particular way, it is proper to construe the claim term in accordance with that characterization. Here, the words ‘pager’ and ‘pager units’ appear in the specification over 200 times, and, apart from the Abstract, the specification repeatedly and exclusively uses these words to refer to the devices in the patented system. Although GPNE is correct that the specification discloses information about the features the devices have and the network they operate on, none of this is inconsistent with characterizing the devices as a type of pager.

Id. at 1371 (internal citations omitted).

Similar to *GPNE*, the claim term “communication apparatus” as recited in the Challenged Claims only appears in the claims and the title. The term “communication apparatus” is not used in the ’991 Patent Specification. Applicant even amended the title of the ’991 Patent Application after allowance from “Television Receiver with a TV Phone Function” to the current title using “Communication Apparatus.” (Ex. 1002, *File History*, 234-36). The purported inventive device is referred to as a “videophone function-added TV receiver” more than 280 times in the specification. Given this repeated, consistent, and exclusive characterization of the TV/videophone-capable device as a “videophone function-added TV receiver,” it is proper to construe “communication apparatus” as a “videophone function-added TV receiver.” *GPNE*, 830 F.3d at 1370-71.

V. SHOWING OF ANALOGOUS PRIOR ART

Asmussen, *Bear*, *DeFazio*, and *Lindstrom* were not cited or considered during the prosecution of the ’991 Patent. *Marley* was cited but not considered during prosecution; a *Becton Dickinson* analysis is provided below for *Marley*. The earliest claimed priority date for the ’991 Patent is September 25, 2008.

A. *Asmussen* Is Analogous Prior Art

Asmussen, a U.S. patent filed on June 30, 2000, and issued July 21, 2009, qualifies as prior art under § 102(e). *Asmussen* (Ex. 1004). *Asmussen* discloses a set top terminal (STT) having a camera and microphone and capable of sending and

receiving video calls to other STTs via a network, including a cable television network and a cellular network. *Asmussen*, Abstract, 3:20-30, 4:5-30. The STT receives digital video programs from the cable network and pauses the video programs when an incoming video call is detected. *Id.* Because both the '991 Patent and *Asmussen* are directed to systems for receiving, over a network, video programs and performing videophone calls, *Asmussen* is in the same field of endeavor and is pertinent to a problem to be solved by the claimed invention in the '991 Patent. (*Dec.* 54-55). Therefore, *Asmussen* is analogous art to the '991 Patent.

B. *Bear* Is Analogous Prior Art

Bear, a U.S. patent filed on September 30, 2003, and issued June 16, 2009, qualifies as prior art under § 102(e). *Bear* (Ex. 1005). *Bear* discloses a general purpose computing device, including a camera and microphone, for performing videophone calls. *Bear*, Abstract. Because *Bear*, like the '991 Patent, discloses a device for performing videophone calls, including control and processing of videophone calls, *Bear* is in the same field of endeavor and is pertinent to a problem to be solved by the claimed invention in the '991 Patent. (*Dec.* 64-65). Therefore, *Bear* is analogous art to the claimed invention in the '991 Patent.

C. *Marley* Is Analogous Prior Art

Marley, published June 21, 2007, qualifies as prior art under § 102(b). *Marley* (Ex. 1006). *Marley* discloses a set-top box for receiving video from a video program

source over a network and for performing videophone calls. *Marley*, Abstract, ¶¶ [0015-0016]. Because *Marley*, like the '991 Patent, discloses a device for receiving video programs and performing videophone calls, *Marley* is in the same field of endeavor and is pertinent to a problem to be solved by the claimed invention in the '991 Patent. (*Dec.* 67). Therefore, *Marley* is analogous art to the claimed invention in the '991 Patent.

Marley was cited but not substantively considered during original examination of the '991 Patent. (Ex. 1002, 180). The '991 Patent Application was allowed with only § 112, ¶ 2 rejections and a non-statutory double patenting rejection. (Ex. 1002, 148-154). *Marley* was, however, referenced by the Examiner in the parent application, now U.S. Patent No. 8,363,087. (Ex. 1010, '087 *Patent*; Ex. 1011, *File History for '087 Patent*). Specifically, the Examiner never applied *Marley* as the basis for a rejection but did identify it in the "Reasons for Allowance." (Ex. 1002, 366). The Examiner noted *Marley* teaches a set-top box with video telephone functionality but stated "Marley...does not teach or suggest starting the videophone communication upon receiving an ***inbound videophone call***. Rather, in *Marley* as well as the other cited prior art references, videophone communication is started in response to the called party manually accepting the inbound videophone call." *Id.* *Marley* was therefore distinguished by the Examiner with respect to *Marley's* teachings related to an ***inbound videophone call***. In contrast, *Marley* is

applied as a ground of unpatentability for claims 2, 5, 9, and 12, none of which is directed to an inbound videophone call. *Cf.* Ex. 1002, 366, with '991 Patent, Claims 2, 5, 9, and 12.

Applying the *Becton Dickinson* factors, the Board should not exercise its discretion under § 325(d). *See Becton, Dickinson, and Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17-18 (PTAB Dec. 15, 2017) (designated precedential March 21, 2018). The Examiner did not have the teachings of *Asmussen* and *Bear* when considering the patentability of the claims of the '991 Patent (or any priority patents). *Asmussen* provides a significant and detailed disclosure that is not similar to the prior art considered, including *Marley*; is materially different from *Marley*; and is non-cumulative (factors (a) and (b)). For example, *Asmussen* teaches almost all of the limitations of the challenged independent claims, with *Bear* being applied for only common-sense functionality, such as rendering the camera operative (claim 1(e)) in response to an inbound videophone call notice and stopping the camera (claim 1(g)) in response to an input to stop the videophone call. (Note, Apple submits *Asmussen* teaches all of claims 1(e) and 1(g) and merely provides *Bear* as an alternative teaching). Therefore, *Asmussen* is non-cumulative prior art that discloses features not previously considered by the Office for patentability, especially with respect to *Marley*.

Marley was not cited in the '991 Patent and was only referenced by the Examiner in the parent application but not cited as a basis for rejection. Factors (c) and (d) therefore favor the Board not using its discretion under § 325(d). Factor (e) is not applicable because the Examiner did not rely on *Marley* as a basis for rejection. Regarding factor (f), *Asmussen* in combination with *Bear* provides additional evidence and facts warranting reconsideration of any prior art, including *Marley*, previously considered by the Office, as discussed above.

Apple thus respectfully requests the Board not exercise its discretion under § 325(d).

D. *DeFazio* Is Analogous Prior Art

DeFazio, issued August 17, 1999, qualifies as prior art under § 102(b). *DeFazio* (Ex. 1007). *DeFazio* teaches a caller identification and names database for efficient translation of a “calling party’s telephone number to the name of the person listed as the subscriber to that telephone number.” *DeFazio*, 1:57-61, Abstract. *DeFazio*’s system and method can be used for “telecommunication related services such as internet services, telephone/video conferencing services and the like.” *DeFazio*, 87:67-8:3. Because *DeFazio*, like the '991 Patent, discloses storing phone numbers and their associated data in memory and displaying such data to a user upon selection of a number to call, *DeFazio* is in the same field of endeavor and is

pertinent to a problem to be solved by the claimed invention in the '991 Patent. (*Dec.* 69). Therefore, *DeFazio* is analogous art to the claimed invention in the '991 Patent.

E. *Lindstrom* Is Analogous Prior Art

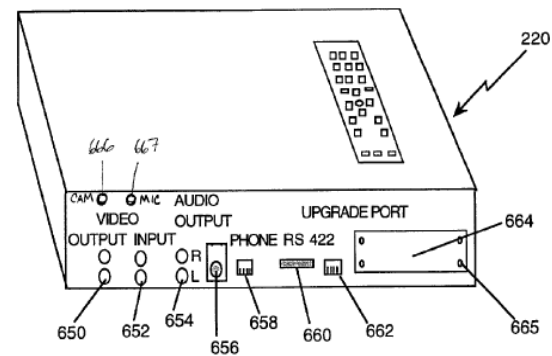
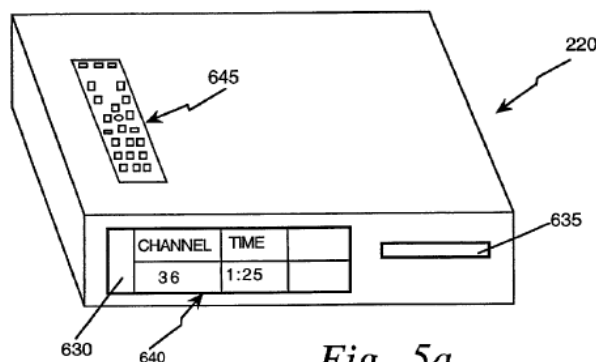
Lindstrom, published February 12, 2004, qualifies as prior art under § 102(b). *Lindstrom* (Ex. 1008). *Lindstrom* teaches a cable television receiver that includes a single integrated circuit having two tuners, namely an in-bound tuner and an out-of-band tuner. *Lindstrom*, ¶ [0015]. The two tuners are contained within a single integrated chip contained within a set top box to allow receipt of cable television programming along with video-on-demand and videophone signals and simultaneously display said signals on a television display. *Lindstrom*, ¶¶ [0003], [0015]-[0017]. Because *Lindstrom*, like the '991 Patent, discloses dual reception of cable and videophone signals and displaying them on a television display, *Lindstrom* is in the same field of endeavor and is pertinent to a problem to be solved by the claimed invention in the '991 Patent. (*Dec.* 71). Therefore, *Lindstrom* is analogous art to the claimed invention in the '991 Patent.

VI. GROUND 1: THERE IS A REASONABLE LIKELIHOOD CLAIMS 1 AND 8 ARE OBVIOUS OVER *ASMUSSEN* IN VIEW OF *BEAR*

A. Claim 1³

1. Claim 1[Preamble]

To the extent the preamble is limiting, *Asmussen* teaches a communication apparatus, namely a set top terminal 220 in combination with a television 222, display 602, or video display 1400, that transmits and receives digital information to and from another communication apparatus. *Asmussen* teaches a “set top terminal equipped with a camera and microphone” that “includes the capability to send and receive video calls through a cable television delivery system or other communication[s] networks.” *Asmussen* (Ex. 1004), Abstract. The set top terminal (STT) is illustrated in Figs. 5a-b:



Asmussen, Figs. 5a-b, 15:60–16:38 (describing the STT in detail), 3:21-30. *Asmussen* also describes the STT as an upgrade to existing set top converters for

³ See the accompanying Claims Listing Appendix for a listing of claims.

receipt of television programs, thus indicating to a POSITA the STT is a TV receiver with added videophone functionality. *Asmussen*, 49:49–50:17; *Dec.* 73-74, 76-77 (opining the *Asmussen* STT is a “videophone function-added TV receiver” and a “communication apparatus”) and 78-80 (opining it would have been obvious to modify the *Asmussen* STT with any of the features disclosed in *Asmussen* due to *Asmussen* teaching various configurations and upgrades for a conventional STT).

The STT is used in combination with a subscriber’s television 222 (see Fig. 3, above), display 602, or video display 1400, such that video programs and video information from a videoconference call are displayed on the television. *Asmussen*, 25:28-32 (disclosing video and menus with text being displayed on TV), 43:43-55 (disclosing video display as a television “or any device for displaying a video program, such as a computer monitor or flat screen display”), Fig. 3, Fig. 24a (RN 1400).

Therefore, the claimed “communication apparatus” is met by the combination of *Asmussen*’s STT and television or video display. The below mapping of the claimed “communication apparatus” will refer to the STT or the television (or video display), as applicable, but it should be understood the mapping for the “communication apparatus” includes the combination of the STT and TV/display.

Each STT communicates with other STTs to facilitate video conferencing, as illustrated in Fig. 31:

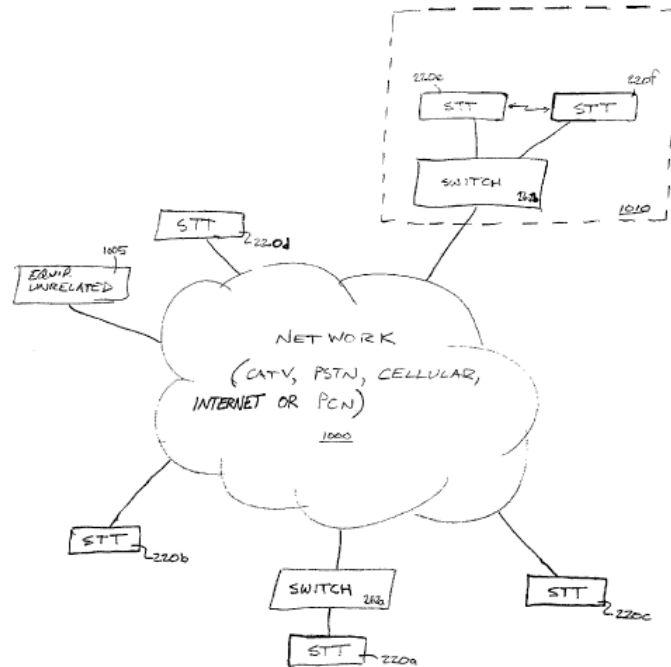


Fig. 31

Asmussen, Fig. 31, 51:10-15, 52:20-25. The STTs transmit and receive digital information, such as digital program signals, digital audio, and digital video calls. *Asmussen*, 3:21-30, 3:58-60, 6:58-65 (discussing transmission of digital data to the STT), 15:15-42 (describing the components of the STT, including digital demodulator 606, demultiplexers 609, and video decompressors 618, 622), 24:30-42 (“The preferred program delivery system uses digitally compressed signals....”), 50:18-43 (disclosing video call transmission/reception, including using standard video encoding programs, such as MPEG), Fig. 4.

Claim 1 does not require the “communication apparatus” must include both the display and other components to be packaged together within a single device or housing. To the extent Maxell contends otherwise, *see* Mapping for Ground 2, Claim 1(c).

2. *Claim 1(a)*

Below is a table with an overview of the mapping of Claim 1(a)’s elements to *Asmussen*’s teachings with exemplary citations:

’991 Patent, Claim 1(a)	<i>Asmussen</i>
“communication apparatus”	set top terminal 220 (or first set top terminal 220a) (11:1-39, 14:4-23, 15:15-23)
“contents server”	operations center 202 (7:56–8:15)
“network interface”	The collective tuner 603 and receiver 750 (15:15-23, 26:1-11, 26:55-63, 28:9-11, 50:4-57, Figs. 4, 5b, 11, 12a-b, 30)
“first digital information”	video programs, including live or prerecorded programs, from a source, such as contents server (4:20-25, 7:34-37)
“second digital information”	video information from a videoconference call (50:18-57, 51:9-23, 58:4-29, 4:5-9, Abstract, Fig. 30)

“another communication apparatus”	second set top terminal (or set top terminals 220b-f) (51:9-23, Fig. 31)
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(Dec. 82).

“network interface”

Asmussen teaches the claimed “network interface.” To the extent Maxell contends *Asmussen* does not teach the claimed “network interface,” see Ground 4 and *Lindstrom*’s teaching of a receiver including an out-of-band tuner for receiving both video-on-demand and videophone signals.

Claim 1(a) recites a “network interface” configured to receive both (1) “first digital information” from “a contents server”; and (2) “second digital information” from the another communication apparatus.” *’991 Patent*, Claim 1(a). The *’991 Patent* describes a network interface 15 but provides no discussion of the structure or type of the network interface. (*Dec. 92, citing ’991 Patent*, 8:26-34, 11:65–12:10 (describing the interface functionally as receiving a signal, such as a video telephone signal or VOD content from a VOD server)). Claim 1(a) similarly does not recite any particular structure of the claimed “network interface” but instead describes the network interface by its functionality, i.e., configured to receive the first and second digital information. A POSITA would have understood a network interface configured to receive first and second digital information is thus met by one or more

interfaces between the communication apparatus and the network. (*Dec.* 92, 109-110).

Asmussen teaches a “network interface,” namely tuner 603 in combination with a receiver 750, that collectively receives the first and second digital information across a cable television network. *Asmussen*, 15:15-20, 26:1-11, 50:44-49; *Dec.* 111-112. The network connecting the cable headend 208 to the STT is a “conventional concatenated cable television system 210.” *Asmussen*, 6:48-50; *Dec.* 106 (noting *Asmussen*’s teaching of other interchangeable networks, such as a cellular network). The tuner 603 receives all cable signals intended for reception on the subscriber’s TV, and the “CATV input signals are received by the set top terminal 220 using a tuner 603 and various receiver components...denoted generally at 601 in FIGS. 12a and 12b....” *Asmussen*, 26:1-8, 15:15-23, 23:35-36, 26:21-29, 28:9-11, Figs. 10-12a, 25:55–26:63. Figure 12a illustrates an upgraded set top terminal with tuner 603 and receiver components 601:

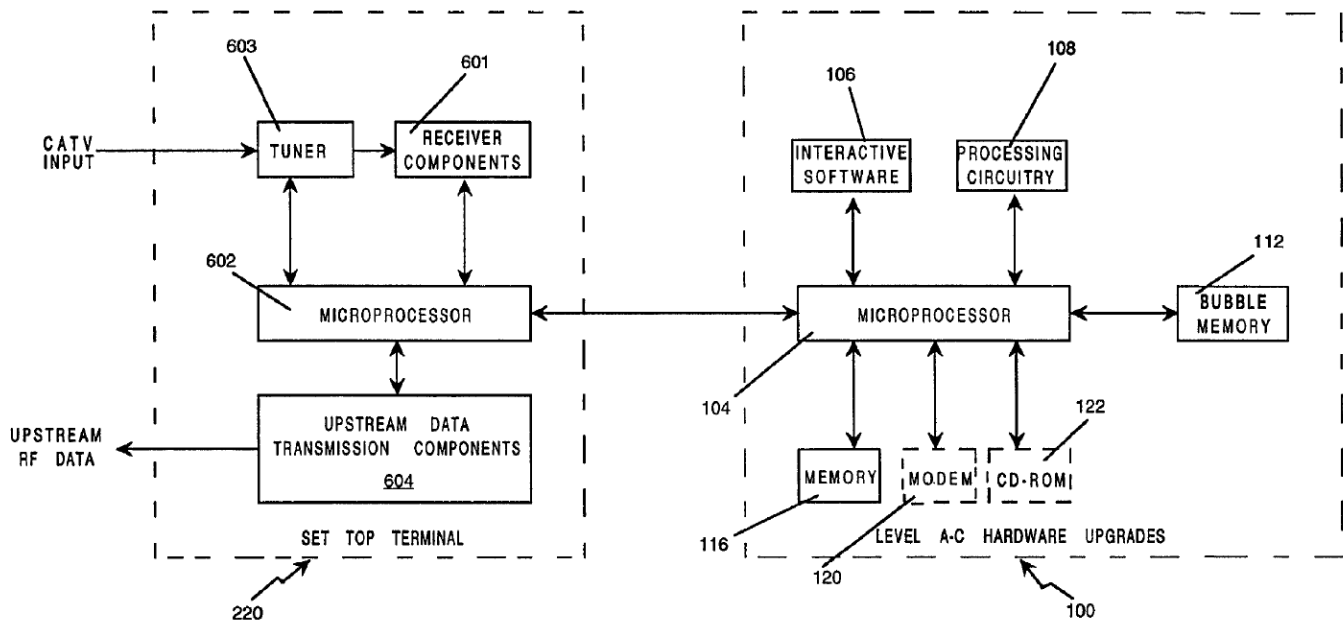


Fig. 12a

Asmussen, Fig. 12a, 26:43–27:3; *see also id.* at Fig. 4, 15:15-23. A POSITA would have understood from *Asmussen* that the tuner 603, which receives CATV signals, receives, at the least, video program information transmitted via the cable television network. *Asmussen*, 7:4-14, 26:57-60, 28:9-11 (“the CATV signals are input to the set top terminal 220 through its tuner 603 and receiver components 601”), Figs. 4 and 12a; *Dec.* 113, 98 (opining the CATV signals include, at the least, video program information satisfying the claimed “first digital information”).

Asmussen further teaches video information from a videophone call may be transmitted across a cable television network and received at receiver 750. *Asmussen*, 53:14-22, 50:4-49; *Dec.* 114-115. Receiver 750 receives “incoming (i.e.,

downstream) video conferencing signal[s],” and videocalls can be made using the cable television network. *Asmussen*, 50:44-51, 53:14-22.

It would have been obvious to modify the STT shown in Figs. 11 or 12a to include the receiver 750 of the Fig. 30 STT. (*Dec.* 116-118). *Asmussen* teaches “[t]o support video calling, the set top terminal 220 is augmented with additional features as shown in FIG. 30,” which includes receiver 750 and transmitter 730. *Asmussen*, 49:44-46. While Fig. 12a is generally referring to the level A, B and C hardware upgrades (*see Asmussen*, 5:24-25), Fig. 12a is an exemplary way a receiver 750 and transmitter 730 would be integrated into the STT. It would have been obvious to a POSITA that the STT including tuner 603 is further modified to include receiver 750, as taught by *Asmussen*, to provide a collective network interface for receiving both first and second digital information across a cable television system. (*Dec.* 115-119).

The requirement the network interface is configured to receive both first and second digital information is mapped below.

“receive first digital information”

Regarding the claimed “receive first digital information,” *Asmussen* teaches the STT, using the tuner 603, receives “video signals and program control signals” that “correspond to specific television programs and menu selections that each subscriber may access....” *Asmussen*, 7:34-37, 26:57-60. *Asmussen* defines “video

programs”: “As used herein, ‘video programs’ include *live or prerecorded programs from any source such as, for example, a broadcast television signal transmission, a cable television signal transmission, satellite television, video streaming over the internet or other network*, a VCR, a computer memory such as a hard disk, CD-ROM, or digital versatile disk (DVD).” *Asmussen*, 4:20-25. The subscriber may access first digital information, such as a prerecorded program or streaming video, using the *Asmussen* STT, as *Asmussen* also illustrates a menu for selecting video programming and movies. (*Dec.* 96, *citing Asmussen*, 6:32-46, 13:2-4, 42:36-63, Fig. 23, RN 1172). *Asmussen* therefore teaches the network interface comprising tuner 603 receives the claimed “first digital information,” namely video program signals. (*Dec.* 85, 82, 96-98).

“which is received from a contents server which is coupled to the communication apparatus via the network interface”

The “operations center 202” of *Asmussen* is a “contents server” providing “first digital information,” as claimed. *Asmussen*, 6:50-53, 53:53-64. The “operations center 202 performs two primary services, packaging television programs and generating the program control information signal” and stores programs for viewing by a subscriber. *Asmussen*, 7:56–8:15; *Dec.* 94. The user of the STT can select the video programming they wish to watch using the menus, and

the operations center will then send the selected video programming to their terminal. *Asmussen*, 7:34-55.

Asmussen teaches the video programs may be received by the STT directly from the operations center or via the cable headend: “Functionally, the set top terminal 220 is the last component in the delivery system chain. The set top terminal 220 receives compressed program and control signals from the cable headend 208 (or, in some cases, directly from the operations center 202).” *Asmussen*, 11:30-39; *Dec.* 93-94, 97-98. The cable headend acts “as an intermediary between the set top terminals 220 and the operations center 202 (or other remote site).” *Asmussen*, 9:39-48. The cable headend’s two primary functions are to “relay the program signal to the set top terminal 220 in a subscriber’s home” and “act as a network controller 214 by receiving information from each set top terminal 220 and passing such information on to an information gathering site such as the operations center 202.” *Id.* Therefore, *Asmussen* teaches the operations center 202 is coupled to the STT, both directly and via the cable headend acting as an “intermediary.”

“a network interface configured to receive...second digital information from the another communication apparatus”

Asmussen teaches the claimed network interface, i.e., the collective tuner 603 and receiver 750, receives second digital information, namely videocall information, from another STT, as recited in Claim 1(a). *Asmussen* discloses one of the advanced

features of the STT is the “capability to send and receive video calls through the set top terminal equipped with a camera and microphone. The video call can be communicated through the cable television delivery system or other communications networks.” *Asmussen*, 4:5-9, Abstract. Figure 31, below, illustrates multiple STTs interconnected by a network, including CATV (cable TV network), for the purpose of performing video conference calls:

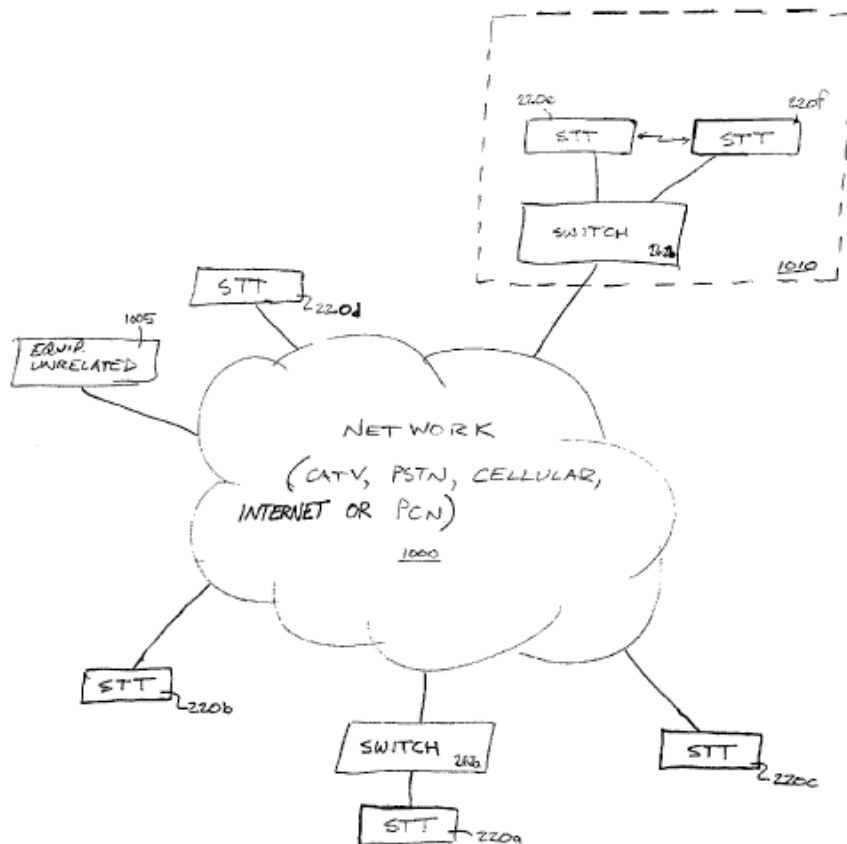


Fig. 31

Asmussen, Fig. 31, 51:10-15, 53:20-22 (“the network 1000 utilizes a cable television transmission network, as described in section A above”). *Asmussen* teaches a first set top terminal 220a receives the video call, including the video information, from a second set top terminal 220b. *Asmussen*, 50:18-57, 51:9-23, 58:4-29, 4:5-9, Abstract, Fig. 30.

Therefore, both the first digital information, i.e., the video programs, and the second digital information, i.e., the video information from a video call, are received across a cable television transmission network, and the video information from the video call is received from another communication apparatus, i.e., a second STT 220b-f. (*Dec.* 99-108).

When the videophone calls are performed utilizing the cable television transmission network, the videocall information (i.e., the claimed second digital)information is received by the collective tuner and receiver 750. (*Dec.* 105, 114-115). *Asmussen* teaches videocall signals are transmitted to STT across the cable television system network. *Asmussen*, 53:14-31. The receiver 750 receives incoming videophone signals. *Asmussen*, 50:40-51. *Asmussen* teaches in Fig. 12 how a receiver is integrated into the STT and further teaches augmenting the existing STT with upgraded functionality, including videocall functionality. *Asmussen*, Fig. 12a, 49:44-46. Therefore, it would have been obvious to configure the network interface to receive both the first digital information via the tuner 603, as mapped above, and

the second digital information, namely the videocalls, via the receiver 750. (*Dec.* 114-119).

3. Claim 1(b)

Asmussen discloses the STT includes a camera and a microphone: “A set top terminal equipped with a camera and microphone includes the capability to send and receive video calls through a cable television network delivery system or other communications network.” *Asmussen*, Abstract. The camera and microphone can be either integrated into the STT or external components connected via input ports. *Asmussen*, 11:26-29, 16:34-37, Fig. 5b. Figure 30, below, illustrates both the camera 2000 and microphone 2002 integrated into the set top terminal:

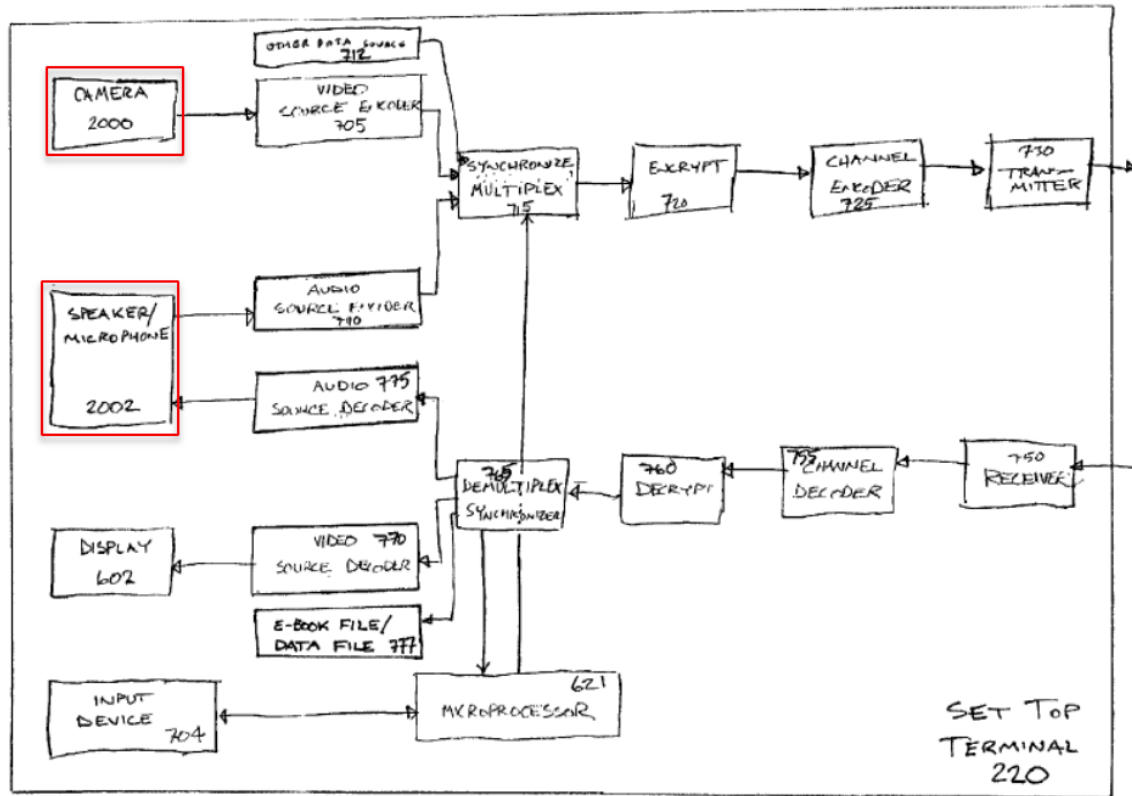


Fig. 30

Asmussen, Fig. 30 (annotated), 49:44-48. *Asmussen* therefore teaches the STT includes a “camera,” as claimed.

Asmussen also teaches the camera is “configured to generate video information which is included in third digital information,” as claimed. When performing video calls, both the camera and microphone will output signals, such as video signals, that the STT converts into a digital format and compresses/encodes. *Asmussen*, 55:56–56:8; Dec. 121 (citing *Asmussen* 50:18-43).

Although not recited in claim 1(a), claim 1(f) requires the output of the third digital information to the another communication apparatus. Information generated

by a camera and output to the another communication apparatus, as recited in claim 1(a), includes video information. (*Dec.* 122). As mapped above and detailed even further for claim 1(f), the video information generated at the first STT 220a in *Asmussen* is transmitted to the second STT 220b-f during the videoconference call. *Asmussen*, 50:35-40, 50:44-57, 58:4-29.

4. Claim 1(c)

Asmussen teaches the claimed “communication apparatus” is the STT used in combination with a subscriber’s television, display, or video display. *See* Mapping for Claim 1[Preamble]. Figure 30 of *Asmussen* illustrates the set top terminal 220 including display 602, which *Asmussen* states is typically television 222:

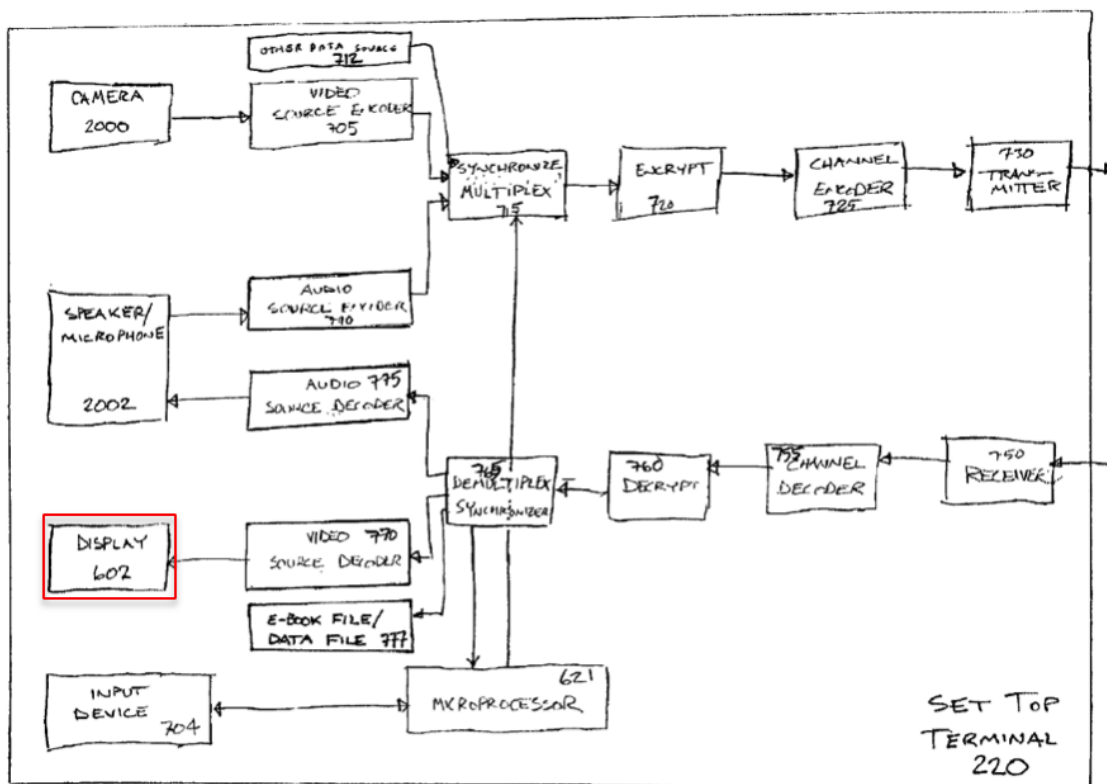


Fig. 30

Asmussen, Fig. 30 (annotated), 50:44-51; *Dec. 123*. *Asmussen* thus teaches a display, as claimed, namely television 222, display 602, or video display 1400. *Asmussen*, 25:28-32 (describing video and menus with text being displayed on TV 222), Fig. 2 (RN 222); *see also Dec. 78-80* (opining it would have been obvious to combine embodiments of *Asmussen* given *Asmussen*'s teachings the existing STT is augmented).

Asmussen also teaches the display 222,1400 is "configured to display at least the first and the second digital information," as claimed. *Asmussen* teaches the video display 1400 "may be implemented with a television 222 *or any device* for

displaying *a video program*, such as a computer monitor or flat screen display.” *Asmussen*, 43:43-55, Figs. 24a-d (RN 1400) (illustrating various video displays). The “video programs” described in *Asmussen* are mapped as the claimed “first digital information,” as discussed for claim 1(a). *Asmussen* further teaches the video signals from a videoconferencing signal “are decompressed by a video source decoder 770 and output for display on a display device 602, which is typically the television 222.” *Asmussen*, 50:44-51 (note RN 602 is used to identify both the display device and the microprocessor (*see* 15:20-33)); *Dec.* 123 (opining *Asmussen* teaches the video programs and videocall data are displayed on the display device). The video associated with a videoconference call is mapped as the “second digital information,” as discussed for claim 1(b).

To the extent Maxell contends claim 1(c) requires *simultaneous* display of both the first and second digital information on the display, *Asmussen* also teaches a picture-in-picture display of both the video programs and video calls: “The set top terminal also includes features for caller identification of video calls and *dual display of video programs and video calls, such as picture in picture.*” *Asmussen*, Abstract, 59:44-54; *Dec.* 124.

5. Claim 1(d)

Asmussen teaches the STT (which, as mapped for the preamble, is a component of the claimed “communication apparatus”) includes a processor, namely microprocessor 602, for receiving and sending of video phone calls:

The ***microprocessor 602 is capable of executing program instructions stored in memory***. These instructions allow a user to access various menus by making selections on the remote control 900. ***To support video calling, the instructions also enable the microprocessor 602 to process video signals from a camera, to process audio signals from a microphone and to control a camera and microphone.***

Asmussen, 15:24-30, Fig. 4; *Dec.* 125-126. The microprocessor may comprise multiple processors and controls the reception of the digital video programming.

Asmussen, 15:30-33, 26:60-63, 36:13-15, 32:63–33:3.

6. Claim 1(e)

Asmussen alone or *Asmussen* in combination with *Bear* teaches the limitations of claim 1(e).

(a) *Asmussen’s* Teachings

Asmussen teaches the STT actively monitors for incoming video phone calls, and if one is detected, automatically pauses the current video program and displays a notification of the incoming video call. *Asmussen*, 46:27-51, Fig. 28. The monitoring and automatic pausing is performed using software or firmware executed

Asmussen, Fig. 28 (annotated). *Asmussen* teaches monitoring the on-line connection (step 1441), detecting a communications event (step 1442), automatically pausing the video program in response to the communications event (step 1443), and displaying an indication of the communications event (step 1446). *Asmussen*, 46:26-51, 44:7-13 (teaching a communications event includes an “incoming video call”), 46:59–47:3 (teaching an indication of a communications event is displayed on the same screen currently displaying the video program), 47:26-38, Fig. 28 (Steps 1451, 1456), Figs. 24a-d (illustrating exemplary indications), 43:41-55.

Asmussen thus teaches when the claimed processor (i.e., microprocessor 602), receives an inbound videophone call notice (i.e., an indication of a communications event per step 1442 of Fig. 28, where a communications event is defined as an “incoming video call” (*see* 44:7-13)), while displaying the first digital information (i.e., while viewing the video program) on the display (i.e., TV 222 or video display 1400), the processor pauses the displaying of the first digital information (step 1443 of Fig. 28, 44:44-48). *Asmussen*, 44:20-24 (teaching buffering of the video program in response to the automatic pausing); *Dec.* 127.

Regarding the claimed processor “renders the camera operative,” *Asmussen* also teaches the microprocessor supports video calling, including processing video signals from the camera. *Asmussen*, 15:27-30; *Dec.* 128-130.

Asmussen further teaches the microprocessor renders the camera operative “when the processor receives an inbound videophone call notice,” as claimed. The user may set up, via a video call options menu 1022, a default state of the video camera 2000 to on or off. *Asmussen*, 21:34-42. When the user selects a default state of the video camera 2000 as “on,” the camera is rendered operative when the processor receives the inbound videophone call notice, per steps 1441 and 1442 of Fig. 28. (*Dec.* 128-129).

(b) *Bear’s Teachings*

To the extent Maxell contends *Asmussen* does not teach the claimed processor “renders the camera operative,” *Bear* teaches such. *Bear* discloses a general purpose computing device with a processor that receives an incoming videophone call, automatically launches an A/V capture application, and begins capturing video from a camera. *Bear* (Ex. 1005), 4:22-28, 6:31-56, 11:33-45, Fig. 1; *Dec.* 138 (opining *Bear* teaches rendering the camera operative without the need for the user to answer the incoming video call).

Bear teaches a “control handling program (e.g., the operating system 1343, or an application program 135 such as an A/V capture application program)” that generates hardware and software events or commands, such as “initiating video capture.” *Bear*, 9:33-45, 10:32-37; *Dec.* 134. *Bear* teaches the “***computer system may launch the [A/V] application in response to receiving an incoming phone call***

that supports video....” Bear, 11:37-43. Upon launch, the A/V application determines if still or video images are to be taken, and if video images are to be taken, proceeds to capture a video stream:

First, the A/V capture application checks if a video stream or still images are to be captured at step 1002. [¶] If the user has not selected still images to be captured in the A/V capture application, ***then the application sets the camera capture indicator light 306 to red at step 1012 to indicate that the A/V capture application is in the mode of capturing a video stream. The camera begins capturing the video stream at step 1014.***

Bear, 11:43-45, 11:61-66, Fig. 10; *Dec.* 135-137.

Based on these collective teachings, *Bear* teaches a system that receives an inbound video phone call notice and renders the camera operative. (*Dec.* 137). Figure 9 illustrates various states of operation using the A/V capture application, where one of the states is a Capturing 904 state. *Bear*, 10:27-37, 10:41-44. *Bear* also teaches the A/V capture application may be launched whenever a capture event occurs (11:35-37), and further discloses “launch[ing] the application in response to receiving an incoming phone call that supports video” (11:37-43). Upon launch, the A/V application “begins capturing the video stream” if the user has selected video to be captured (11:61-66).

A POSITA would have been motivated and found it obvious to modify *Asmussen* to include *Bear*'s teaching of automatically launching the A/V application and beginning capture of a video stream in response to receiving an incoming call supporting video. (*Dec.* 140-141). Such an addition uses *Bear*'s known technique of the processor enabling and capturing video from a camera with *Asmussen*'s ability for the processor to receive an inbound videocall notification and pause the current video program. *Id.* The modification of *Asmussen*'s processor would improve the functionality of the STT in the same way as *Bear* and accomplish *Bear*'s stated need for a "simplified system" for interacting with media applications. *Bear*, 2:1-10. The modified *Asmussen* system would be simplified with increased user friendliness, reducing the learning curve needed for use of the system. (*Dec.* 140-141). For example, turning on the camera in response to the incoming call notification would reduce the potential of missing a videophone call by eliminating the need for a user to locate the remote and select the correct button on the remote to begin the conversation. There would have been a reasonable expectation of success in modifying *Asmussen*'s system, because the modification requires only simple programming techniques well within a POSITA's expertise and *Asmussen* already teaches a video call options menu 1022 allowing for a user to set default functionality, including turning a camera on/off. *Id.*

7. ***Claim 1(f)***

Asmussen teaches the limitations of claim 1(f). As discussed for the claim 1(b) mapping, the *Asmussen* microprocessor 602 executes instructions to process the video signals generated by the camera and microphone of the first STT 220a (i.e., the claimed “third digital information”). *Asmussen*, 55:56–56:8. *Asmussen* teaches “***each of the set top terminals 220 participating in a video conference call broadcasts its audio/video signal(s)***, and any set top terminals 220 that receives the signal(s) ***performs the necessary processing to output the audio and video components*** in combination with those of other received signal(s).” *Asmussen*, 52:20-25. Each STT includes the capability to send and receive video calls. *Asmussen*, 4:5-9, Abstract, 50:4-10, 50:18-43, 55:56–56:31 (discussing signal processing performed by the STT, including compression of the video signal from camera 2000, and reception by an STT of received signals), 58:16-29, Fig. 30 (illustrating a network of STTs 220a-f for video conferencing). From these teachings, a POSITA would have understood the microprocessor of the STT outputs the video information captured by the camera, at least because *Asmussen* teaches the STT transmitting the video information to another STT. (*Dec.* 142-144). Therefore, *Asmussen* teaches the microprocessor of a first set top terminal (which, as mapped for the preamble, is a component of the claimed “communication apparatus”) outputs

the captured video signals from the first set top terminal 220a (i.e., the claimed “third digital information”) to another set top terminal 220b-f.

Asmussen also teaches set top terminal 220a displays the second digital information (i.e., the video information from the another communication apparatus) of the videophone call on the display, as claimed. *See also* Mapping for Claim 1(c). *Asmussen* discloses a received or incoming video conferencing signal is decoded, decrypted, demultiplexed, and decompressed. *Asmussen*, 50:44-57. The video signals are “output for display on a display device 602, which is typically the television 222.” *Asmussen*, 50:49-54; *Dec.* 145. Therefore, *Asmussen* teaches displaying the second digital information of the videophone call, e.g., the video information from a second set top terminal, on the display of the first set top terminal, as claimed.

8. Claim 1(g)

Asmussen alone or in combination with *Bear* teaches the limitations of claim 1(g). *Asmussen* teaches the set top terminal illustrated in Fig. 30 includes an input device 704, which may be a remote control unit 900. *Asmussen*, 49:49-50, 50:2-3, Fig. 30. “The input device 704 performs the function of accepting user input in order to establish and manage a video call, e.g., entering party identifiers, hanging up, etc.” *Asmussen*, 49:5–50:3. The input device (remote control) is also in direct communication with microprocessor 602, as illustrated in Fig. 30, thus indicating

that an input to the input device is transmitted to the microprocessor for processing. *Asmussen*, Fig. 30; *Dec.* 146-147. *Asmussen* further teaches the remote 900 includes a “hang up” button to support video calling, which a POSITA would have understood stops the videophone call. *Asmussen*, 31:39-43, 49:57-59. Because *Asmussen* teaches the set top terminal includes an input device (49:49-50), such as a remote control (50:2-3), for performing video calling (49:57-59), and because the remote control includes a “hang up” button (31:39-43), the microprocessor 602 of the set top terminal receives an input for stopping the videophone call, as claimed. (*Dec.* 146-148).

Asmussen teaches or otherwise renders obvious stopping the videophone call also stops output of the video information generated at the set top terminal and stops the camera. (*Dec.* 149). *Asmussen* teaches the user may manage the video call using the input device, including providing user input of “hanging up.” *Asmussen*, 49:57-59. A natural and expected result of hanging up the videophone call would be stopping the output of the video information from the videophone call and stopping the camera. (*Dec.* 149). This would entail common-sense functionality of the set top terminal so that the terminal is not needlessly outputting information and operating the camera once the videophone call is complete. *Id.*

To the extent Maxell contends *Asmussen* does not teach or render claim 1(g) obvious, *Bear* teaches such. *Bear* teaches “[w]hen the call is over, the system may

be configured such that *the user may hang up by pressing the camera button, which will terminate the call and turn off the camera indicator light.*” *Bear*, 6:50-53.

When the “camera indicator light” is off, the state of the camera is “off”: “*The camera indicator light 306 may indicate state via various colors and flash patterns, e.g., steady state unlit when the camera is off, ...*” *Bear*, 7:46-56). Therefore, *Bear* teaches the video capture system receives an input to end the video call from the user, and in response, terminates the video call and turns the camera off. (*Dec.* 150).

Termination of the video call and turning the camera off, as taught by *Bear*, stops output of the claimed “third digital information” to the another communication apparatus. Because the camera is turned off, video information of the videocall is no longer available to output. (*Dec.* 151). Additionally, upon terminating the call, the system is no longer generating video information for output to the another communication apparatus. *Id.* *Bear* teaches “[w]hen the call is over,” the user can hang up by pressing the camera button to thereby “terminate” the call. *Bear*, 6:50-53. If the call is over and terminated, the output of the video information is also “over” and “terminated.” (*Dec.* 150-151).

This understanding is further supported by *Bear*, which discloses a Stopped 902 state to which the system transitions if a stop event occurs. *Bear*, 11:18-22, Fig. 9. “A stop event may also be generated by other ways such as pressing the stop button illustrated within the transport controls of FIG. 7.... While in the Stopped 902

state, *the system ceases video capture.*” *Bear*, 11:28-32, 9:4-18, Fig. 7; *Dec.* 152 (opining depressing a “Stop” button shown on video controls 402 of Fig. 7 would stop the video capture or such would be obvious). When the system ceases video capture in response to depressing the Stop button, the system also stops output of the video information. (*Dec.* 152).

A POSITA would have been motivated and found it obvious to modify *Asmussen* to include *Bear*’s known technique of receiving an input via a user pressing a button to terminate the video call and stop the camera. (*Dec.* 153). *Asmussen* teaches the set top terminal includes a remote control with a button for hanging up (i.e., stopping) the video call. *Asmussen*, 31:39-43. Modifying *Asmussen*’s set top terminal (and specifically programming the processor) to stop the output of the video information and stop the camera when the “hang up” button is depressed would improve the functionality of the set top terminal in the same way as *Bear*. For example, modifying *Asmussen*’s set top terminal so that “hanging up” the call also stopped output of the video information from the camera would prevent needlessly continuing to capture video that is not otherwise being outputted to the another communication apparatus because the video call is terminated. (*Dec.* 153). Just as hanging up a conventional audio-only call (whether made using a land-line and PSTN or a mobile device and wireless network) stops output of audio information to the called party, a POSITA would have found it obvious that the

expected result of ending the videophone call in *Asmussen* and turning off the camera would be the termination of outputting video signals to the another communication apparatus. (*Dec.* 149). Therefore, it would have been obvious to modify *Asmussen* with *Bear's* teachings of stopping output of the video information and stopping the camera. *Id.* at 149, 153.

B. Claim 8

1. Claim 8[Preamble]

(a) “A method for transmitting and receiving digital information for a communication apparatus”

See Mapping for Claim 1[Preamble]. *Asmussen* discloses methods for transmitting video programs to a set top terminal and receiving video call information from another set top terminal. *Asmussen*, 25:28-32, 7:34-37, 4:5-9. Similar to the mapping for Claim 1, the claimed “communication apparatus” comprises the combination of the set top terminal and the display 222,602,1400.

(b) “wherein the communication apparatus comprises a camera, a network interface, a display and a processor”

See Mapping for Claims 1[Preamble], 1(b) (camera), 1(a) (network interface), 1(c) (display), and 1(d) (processor).

(c) “wherein the method is executed by the processor”

See Mapping for Claims 1(d) and 1(e)-(g) (mapping how processor 602 performs each of the claimed functions). *Asmussen* teaches microprocessor 602 is

capable of executing program instructions, including for supporting video calling and reception of video programs. *Asmussen*, 15:24-30, 26:60-63.

2. Claim 8(a)

See Mapping for Claim 1(c) (regarding displaying first digital information), Claim 1(d) (processor performing the step), and Claim 1(a) (regarding remainder of Claim 8(a)).

3. Claim 8(b)

See Mapping for Claims 1(d)-(e); *Asmussen*, 48:1-15.

4. Claim 8(c)

See Mapping for Claims 1(d)-(e).

5. Claim 8(d)

See Mapping for Claims 1(a) and 1(d)-(f) (including displaying of the second digital information). *Asmussen* also teaches the microprocessor 602 receives the videocall information (i.e., the “second digital information”) in response to receiving an inbound videophone call notice while playing the first digital information. *Asmussen* teaches receiving an indication of a communications event, which includes an incoming video call, and the indication may be received while playing the video program. *Asmussen*, 43:18-40, 44:9-19, 47:26-29. The *Asmussen* system then receives user input and determines if the user input is a “triggering event.” *Asmussen*, 47:39-51. An exemplary triggering event is a user answering a call. *Id.*

When the user answers the videophone call, the set top terminal begins receiving video information from the other party to the call, i.e., the claimed “second digital information.” (*Dec.* 155).

A POSITA would have also understood the microprocessor receives the video information from the videocall, or otherwise found it obvious, because *Asmussen* teaches the microprocessor supports the video calling functionality. (*Dec.* 154, *citing Asmussen*, 15:24-30, 26:60-63).

6. Claim 8(e)

See Mapping for Claims 1(b) and 1(d)-(e). *Asmussen* teaches the microprocessor 602 processes video signals from a camera and may include a camera microprocessor. *Asmussen*, 15:27-33. Because *Asmussen* teaches the microprocessor executes program instructions for a video call (15:24-30), the microprocessor instructs the camera 2000 to generate the video information, i.e., the claimed “third digital information.”

Asmussen additionally teaches the generating of video information is responsive to receiving an inbound videophone call notice while playing the first digital information. *See* Mapping for Claims 1(e) and 8(b), 8(d) (mapping the “while playing the first digital information”). To the extent Maxell contends *Asmussen* does not teach such, *Bear* teaches generating video information when an inbound

videophone call notice is received, as mapped for Ground 1, Claim 1(e) and the limitation of “render[ing] the camera operative.”

7. Claim 8(f)

See Mapping for Claims 1(c), 1(d), and 1(f).

8. Claim 8(g)

See Mapping for Claims 1(d) and 1(f).

9. Claim 8(h)

See Mapping for Claims 1(d) and 1(g).

10. Claim 8(i)

See Mapping for Claims 1(d) and 1(g).

VII. GROUND 2: THERE IS A REASONABLE LIKELIHOOD CLAIMS 1-5 AND 8-12 ARE OBVIOUS OVER *ASMUSSEN* IN VIEW OF *BEAR* AND IN FURTHER VIEW OF *MARLEY*

A. Claim 1

The mapping for this Ground 2, Claim 1 relies on *Asmussen* and *Bear*, as set forth for Ground 1, Claim 1, and Apple incorporates by reference such mappings. The mapping for this Ground 2, Claim 1 (and specifically, Claim 1(c)) further relies on *Marley*, as discussed below.

1. Claim 1[Preamble]

See Mapping for Ground 1, Claim 1[Preamble].

2. Claim 1(a)

See Mapping for Ground 1, Claim 1(a).

3. Claim 1(b)

See Mapping for Ground 1, Claim 1(b).

4. Claim 1(c)

See Mapping for Ground 1, Claim 1(c).

While Claim 1 does not require the communication apparatus must include both the display and other components be packaged together within a single housing, to the extent Maxell contends a single housing must contain both the display and other recited components of the claimed “communication apparatus,” *Marley* teaches such. *Marley* teaches the “set top box features and functionality can be integrated into a TV or monitor, so that no separate physical box is needed.” *Marley*, ¶ [0029]. The set top box has integrated video telephone functionality for communicating with other set top boxes connected via a cable television network. *Marley*, ¶¶ [0005], [0016], [0019], Fig. 3. Therefore, *Marley* teaches a set top box with video phone capability and a display integrated into a single housing or unit. (*Dec.* 157).

A POSITA would have been motivated and found it obvious to modify *Asmussen* to include *Marley*’s teaching of incorporating all of its components into a single housing. (*Dec.* 158). *Marley* teaches consumers lacked the confidence to purchase videophones due to their high cost, and the fact that purchasing one generally required the purchase of a stand-alone unit. *Marley* states it would be

“advantageous, therefore, to provide video telephony functionality and service to a consumer via an information appliance and telecommunication infrastructure that is preexisting in a large number of residential environments.” *Marley*, ¶¶ [0003]-[0005]. Such a modification to *Asmussen* would incorporate *Marley*’s stated benefits of: (1) reducing the number of appliances a consumer would be required to purchase in order to have videophone capabilities; (2) providing videophone capabilities to a consumer in a format that they are already familiar with; and (3) utilizing a telecommunications infrastructure (i.e., cable television network) that a consumer is more than likely to already be using. (*Dec.* 158).

5. Claim 1(d)

See Mapping for Ground 1, Claim 1(d).

6. Claim 1(e)

See Mapping for Ground 1, Claim 1(e).

7. Claim 1(f)

See Mapping for Ground 1, Claim 1(f).

8. Claim 1(g)

See Mapping for Ground 1, Claim 1(g).

B. Claim 2

Claim 2 depends from claim 1. The combination of *Asmussen* and *Bear* (Ground 1, Claim 1) or the combination of *Asmussen*, *Bear*, and *Marley* (Ground 2, Claim 1) teaches the limitations of claim 1.

Marley teaches that after the videocall is finished, “the processor restarts the displaying of the first digital information,” as claimed. *Marley* discloses a set top box 100 with integrated video telephone functionality and “networked via the cable television infrastructure...to additional residential locations.” *Marley*, ¶ [0016]. The set top box has “processing capabilities, specifically directed to controlling and managing video telephone functions.” *Marley*, ¶ [0015]. The set top box includes a primary audio/video processor (PAVP) that “pause[s] any programming presently being viewed on the monitor” when an incoming video telephone call is accepted by a user. *Marley*, ¶ [0022]. The PAVP stores the paused programming in “DVR memory 116 for viewing after the termination of the video call.” *Marley*, ¶ [0022]. After termination of the video telephone call, the PAVP “**restore[s] normal television viewing**, thereby allowing the calling and called parties **to resume real time program viewing, or recall the paused programming from DVR memory (116, 316) for viewing (519).**” *Marley*, ¶ [0022], Fig. 5; Dec. 159-160.

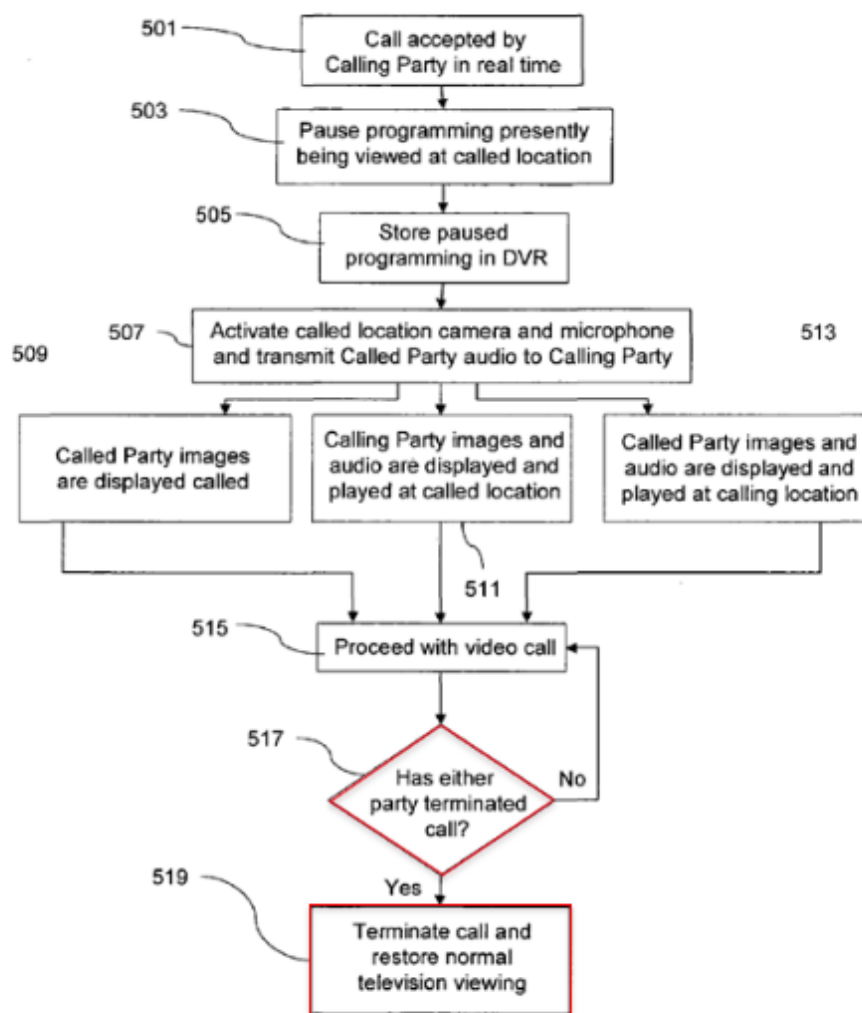


FIG. 5

Marley, Fig. 5. Therefore, *Marley* teaches a processor restarts displaying normal television viewing, such as a video program, (i.e., the claimed “first digital information”) after a user has terminated the video call.

A POSITA would have been motivated and found it obvious to modify *Asmussen* to include *Marley*’s teaching of the PAVP (i.e., the processor) to restart

the playing of a buffered (i.e., stored) video program after the videophone call is finished. (*Dec.* 161-162). Such a modification to *Asmussen* uses *Marley's* known technique of a processor receiving input from a user to end the video call and then responsively restarting the paused programming, with *Asmussen's* teaching of the processor receiving input from a user to end the video call. *Id.* This modification of *Asmussen's* processor would simplify how a user interacts with the set top terminal by eliminating the need for an additional step of pressing a play/resume button, or the potential for the user to push the wrong button when trying to restart the paused video programming and potentially lose the stored video programming. *Id.* Additionally, restarting the display of the first digital information, i.e., the video program, prevents running out of available storage capacity and potential screen burn in or “ghosting.” *Id.* Therefore, *Marley's* feature of restarting the paused video program is a desirable feature addressing a stated potential problem in the set top boxes described in *Asmussen*. Modification of *Asmussen's* microprocessor would have had a reasonable expectation of success, as the restarting of the paused video program would only require programming in response to the indication the user had terminated the call, well within a POSITA's expertise. *Id.*

C. Claim 3

Claim 3 depends from claim 2. The combination of *Asmussen*, *Bear*, and *Marley* (Ground 2, Claim 2) teaches the limitations of claim 2.

Asmussen's set top terminal 220, which is a component of the claimed communication apparatus (*see* Mapping for claim 1[Preamble]), includes a microphone 2002 configured to generate audio information included in the third digital information, as claimed. *Asmussen*, Abstract, 4:5-9, 15:27-30, 16:34-38, 25:40-46, 39:46-52, Figs. 10, 30. The audio data generated by microphone is included in the video call information generated at the set top terminal 220a by the calling party, i.e., the claimed “third digital information.” For videocall transmission, “an audio signal from the speaker/microphone 2002 is subjected to source encoding by an audio source encoder 710,” multiplexed with other signals (e.g., the video signal), and “transmitted by a transmitter 730 upstream into a video conferencing network.” *Asmussen*, 50:18-43; *Dec.* 163.

D. Claim 4

Claim 4 depends from claim 3. The combination of *Asmussen*, *Bear*, and *Marley* (Ground 2, Claim 3) teaches the limitations of claim 3.

Asmussen teaches when the system is displaying a video program (i.e., processing video information of the first digital information) and detects an incoming video call (i.e., receiving an inbound videophone call notice), the system: (1) automatically pauses the currently displayed video program and begins buffering the video program; (2) displays an indication of the incoming video call; and (3) waits for user input before proceeding. *Asmussen*, 46:27-30, 46:44-48 and 43:33-36

(detecting a communications event and responsively pausing the video program), 46:59-65 (displaying an indication of the communications event), 44:9-13 (exemplary communications event is an incoming video call), 47:39-44 and 48:7-15 (receiving user input and determining if triggering event, such as user answering a call), Fig. 28; *see also* Mapping for Claim 1(e). The user may then accept/answer the video call using the “call answer” button on the remote. *Asmussen*, 31:39-43. Once the user accepts the call, the set top terminal establishes the call and begins receiving and displaying the video call information on the television (i.e., the processor switches to processing second digital information). *Asmussen*, 50:44-54 (describing video signals output for display on display device 602 and audio signals output to speaker); *Dec.* 164-165.

Claim 4 recites the switching of processing first digital information to processing second digital information occurs “when the processor receives the inbound videophone call notice.” There is no requirement in claim 4 that the switching be performed without any intervening steps, such as the called party answering the incoming videocall. Indeed, the ’991 Patent contemplates an embodiment where the called party answers the videocall before the calling party begins processing videocall information of the calling party. *’991 Patent*, 15:49–16:9; *cf. id.* at 19:56-64. The description at the ’991 Patent, 15:49–16:9 indicates that, in at least some circumstances, the called party will answer the call before the

called party's communication apparatus begins processing video information from the calling party (i.e., the second digital information). (*Dec.* 167).

Because *Asmussen* teaches the microprocessor executes program instructions for a video call (15:24-30), and the set top terminal stores instructions for call establishment and management (50:11-13), *Asmussen* teaches the microprocessor switches from processing the video program, i.e., the claimed "first digital information," to a function of processing the video call information, i.e., the claimed "second digital information," when the microprocessor receives a communications event, i.e., the disclosed "inbound videophone call notice." (*Dec.* 166).

E. Claim 5

Claim 5 depends from Claim 4. The combination of *Asmussen*, *Bear*, and *Marley* (Ground 2, Claim 4) teaches the limitations of Claim 4. As mapped for this Ground 2, *Asmussen* in combination with *Marley* teaches or renders obvious the limitations of Claim 5. To the extent Maxell contends *Asmussen* in combination with *Marley* does not teach all the limitations of Claim 5, Apple maps *DeFazio* in Ground 3 for teaching the "processor...displays information indicating the outbound videophone call on the display calling message."

Claim 5 recites "***the*** display calling message," which lacks antecedent basis. The '991 Patent describes a "display calling message" and reading "calling message window data from the memory." '991 Patent, 15:40-57, Fig. 5.

Marley teaches a user initiates a video call by utilizing a “dial command” on a remote control 124 or via a manual input panel 114. *Marley*, ¶ [0018]. The user then either manually enters the number of the called party or selects the number from a phone book stored in memory. *Id.* Once the number is chosen, the primary audio/video processor (PAVP) 108 sends a request to connect to the other set top box 222, communicates with the video telephone processor (VTP) to activate both the camera and microphone, and both processors work together to provide a real time image feedback on a portion of the monitor:

In response to the "dial" command, PAVP 108 would also communicate with VTP 102 to activate camera 104 and microphone 106, and provide for the encoding of the audio from microphone 106 and images from camera 104 to a format compatible with PAVP 108 (407). VTP 102, in conjunction with PAVP 108, would also provide a real time image of camera 104's output on a portion of monitor 120 for viewing by the calling party (409).

Marley, ¶ [0019].

Set-top box 100 includes both the PAVP 108 and a video telephone processor (VTP) 102:

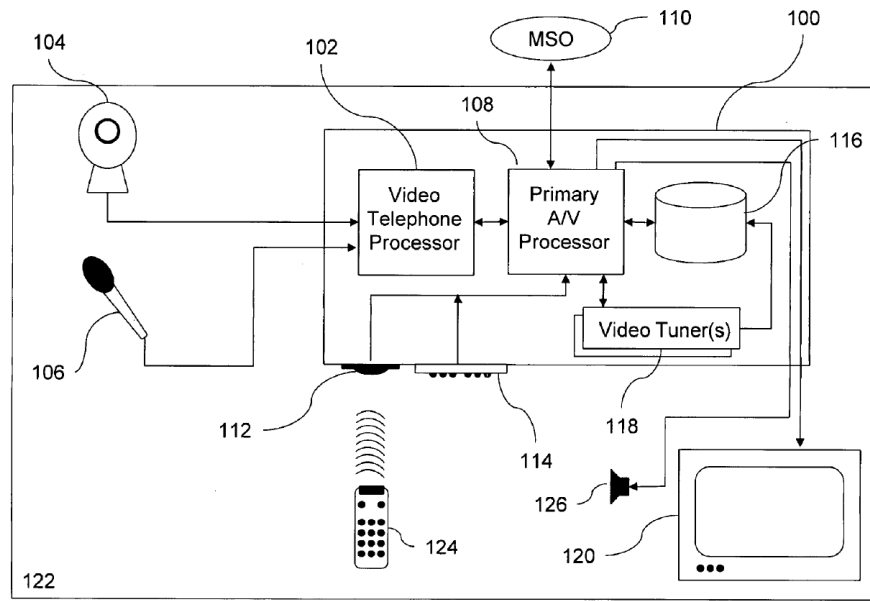


FIG. 1

Marley, Fig. 1, ¶ [0015]. Because the PAVP communicates with the VTP to activate the camera and microphone, and the processors work “in conjunction” and are “linked,” the PAVP renders the camera and microphone operative or such would be obvious. (*Dec. 170*; 169, citing *Marley*, ¶¶ [0015], [0019] and further opining the activation of the camera and microphone is in response to the set top terminal’s processor receiving an input, e.g., the “dial” command, for making an outbound videophone call to another communication apparatus, i.e., the set top terminal 100 at residential location 202). Therefore, the PAVP instructs operation of the camera and microphone via an instruction to the VTP. (*Dec. 170*).

Alternatively, it would have been obvious for the PAVP to directly render operative the camera and microphone or for the PAVP to comprise multiple sub-

processors, including the VTP. (*Dec.* 170). For example, *Marley* teaches the PAVP processor “may include multiple sub-processors and related systems, well-known in the art, to perform the listed operations.” *Marley*, ¶ [0015].

Marley also teaches the claimed “displays information indicating the outbound videophone call on the display calling message.” *Marley* teaches in response to a dial button, the processor performs two operations: (1) “***provide[s] a real time image of camera 104’s output on a portion of the monitor 120***”; and (2) retrieves a previously stored “***phone book***” from “***DVR memory 116***” and displays it on “***a portion of monitor 120***.” *Marley*, ¶¶ [0019], [0018]. The calling party is thus provided with a real-time image of what is “being transmitted to the called party.” *Marley*, ¶ [0019]. Additionally, the calling party can either manually enter the called party’s number or select the called party from the phone book retrieved from DVR memory.

Either or both of the real-time image from the calling party’s camera or the retrieved phone number displayed on the monitor satisfies the claimed “information indicating the outbound videophone call.” (*Dec.* 171, 173-174). Because both the real-time image from the camera and the phone number of the called party are displayed on a portion of the monitor, as taught by *Marley*, either or both of the displayed information indicate the outbound videophone call and are displayed “on the display calling message,” as claimed. (*Dec.* 173-174). Additionally, because the

'991 Patent does not describe any particular format or structure for the claimed "display calling message," any format of a message displaying information indicating the outbound videophone call satisfies the claimed "display calling message." (*Dec. 172, citing '991 Patent, 15:40-57, Fig. 5*).

A POSITA would have found it obvious and been motivated to combine *Marley's* activation of the camera and microphone in response to a user's input to make an outgoing video call (i.e., the "dial command"), and display of information indicating the outbound videophone call, into the set top terminal taught by *Asmussen* in view of *Bear*. (*Dec. 175-178*). This combination would have employed *Marley's* known technique of using a single user input (i.e., the "dial command") to activate both the camera and microphone in *Asmussen's* similar set top terminal. *Id.* A single user input to provide a dial command resulting in the camera and microphone rendered operative is consistent and expected with *Asmussen's* teaching of a default state for the camera being "on." *Id., citing Asmussen, 21:34-42*. When the default state is "on," it would be obvious to a POSITA to render the camera operative in response to *Marley's* dial command. *Id.*

Additionally, it would have been obvious to display information indicating the outbound videophone call. *Asmussen* teaches its set top terminal already contains a list of stored telephone numbers in memory for the purpose of cross referencing incoming telephone numbers with a "list of names, other textual data, or graphics,"

so that if a match is found between the incoming phone number and the stored numbers, “the corresponding text or graphics are displayed on the television screen” for caller ID functionality. *Asmussen*, 39:18-32. *Asmussen* also teaches the set top terminal contains all of the “hardware components necessary to produce a picture-on-picture capability,” so that the video from the video call can be displayed simultaneously on the screen along with video programs. *Asmussen*, 33:53-62, 4:26-28. A POSITA would have had a reasonable expectation of success for this combination at least because the system of *Asmussen* is a system for performing video calls, such that rendering the camera and microphone operative and displaying the outbound videophone call information requires only routine programming of the set top terminal. (*Dec.* 175-178).

F. Claim 8

1. Claim 8[Preamble]

See the Mapping for Ground 1, Claim 8[Preamble] and Ground 2, Claim 1(c) (referring to the communication apparatus being contained in a single housing).

2. Claim 8(a)

See the Mapping for Ground 1, Claim 8(a).

3. Claim 8(b)

See the Mapping for Ground 1, Claim 8(b).

4. Claim 8(c)

See the Mapping for Ground 1, Claim 8(c).

5. Claim 8(d)

See the Mapping for Ground 1, Claim 8(d).

6. Claim 8(e)

See the Mapping for Ground 1, Claim 8(e).

7. Claim 8(f)

See the Mapping for Ground 1, Claim 8(f).

8. Claim 8(g)

See the Mapping for Ground 1, Claim 8(g).

9. Claim 8(h)

See the Mapping for Ground 1, Claim 8(h).

10. Claim 8(i)

See the Mapping for Ground 1, Claim 8(i).

G. Claim 9

Claim 9 depends from Claim 8 and includes limitations substantially similar to Claim 2. The combination of *Asmussen* and *Bear* (Ground 1, Claim 8) or the combination of *Asmussen*, *Bear*, and *Marley* (Ground 2, Claim 8) teaches the limitations of claim 8. For the mapping of this Claim 9, *see* mapping for Ground 2, Claim 2.

H. Claim 10

Claim 10 depends from Claim 9 and includes limitations substantially similar to Claim 3. The combination of *Asmussen*, *Bear*, and *Marley* (Ground 2, Claim 9) teaches the limitations of claim 9. For the mapping of this Claim 10, *see* mapping for Ground 2, Claim 3. Additionally, *Asmussen* teaches the microprocessor 602 generates the audio information. *Asmussen*, 15:27-33 (“[t]o support video calling, the instructions also enable the microprocessor 602...to process audio signals from a microphone....”).

I. Claim 11

Claim 11 depends from Claim 10 and includes limitations substantially similar to Claim 4. The combination of *Asmussen*, *Bear*, and *Marley* (Ground 2, Claim 10) teaches the limitations of claim 10. For the mapping of this Claim 11, *see* mapping for Ground 2, Claim 4.

J. Claim 12

Claim 12 depends from Claim 11. The combination of *Asmussen*, *Bear*, and *Marley* (Ground 2, Claim 11) teaches the limitations of claim 11.

Claim 12 is similar to Claim 5, except that Claim 12 recites “renders the camera and microphone operative and displays information indicating the outbound videophone call on the display *at the same time*.” *See* Mapping for Ground 2, Claim 5. For the limitation of “at the same time,” *Marley* teaches or otherwise renders

obvious rendering the camera and microphone operative and displaying information indicating the outbound videophone “at the same time.”

Marley teaches receipt of a “dial” command, which results in activating the camera and microphone and displaying a real-time image from the camera on a portion of the display (the claimed “information indicating the outbound videophone call”). *Marley*, ¶¶ [0018-0019]. Because *Marley* teaches that “in response” to the “dial command,” the camera/microphone are activated and the real time image is displayed, a POSITA would have understood these events occur “at the same time,” as claimed. (*Dec.* 179). At Fig. 4 of *Marley*, step 407 of activating calling location camera and microphone is performed, and at step 409, the display of the self-image of calling party at the calling location is performed. Therefore, both steps are performed “at the same time” because the video captured from the operative camera and microphone is being displayed. *Id.*

To the extent claim 12 is construed that the events must *begin* occurring at the same time, *Marley* indicates the desire to activate the camera and display the self-image, real-time feedback substantially simultaneously in stating that in response to the dial command, the PAVP “would also communicate with VTP 102 to activate camera 104 and microphone 106, and provide for the encoding of the audio from microphone 106 and images from camera 104.” *Marley*, ¶ [0019]. A POSITA would

understand this sentence in *Marley* stating both events happen in response to the dial command indicates the events happen at the same time. (*Dec.* 180).

Alternatively, it would have been obvious to program the *Asmussen* set top terminal to perform the events at the same time, as *Marley* the steps occur after the set top terminal receives the “dial” command. (*Dec.* 181). As soon as the camera is rendered operative, it would have been obvious to also show the calling party’s video on the calling party’s display, as taught by *Marley*. It would not make sense for a user to initiate a video call by “effecting a “dial” command using [the] remote control” and then have the set top terminal delay encoding and display of the video signal. *Id.* If the purpose of displaying the self-image feedback is to display in real time, per *Marley*, ¶ [0019], then it would be obvious to display the self-image feedback at the same time as the camera is rendered operative. Otherwise, there is a situation where the calling party does not see their image but the receiving party does. This would be counter to *Marley*’s stated desire to “let[] the calling party see the image being transmitted to the called party.” *Id.* Thus, to have the steps of rendering the camera and microphone operative and displaying the calling party’s image at the same time is not only practical and common sense but removes any unnecessary delay that could adversely affect the calling party’s experience with the video call system. *Id.*

See the mapping for Ground 2, Claim 5 for the motivation to combine *Asmussen* and *Marley* for Claim 12.

VIII. GROUND 3: THERE IS A REASONABLE LIKELIHOOD CLAIMS 5 AND 12 ARE OBVIOUS OVER *ASMUSSEN* IN VIEW OF *BEAR* AND IN FURTHER VIEW OF *MARLEY* AND *DEFAZIO*

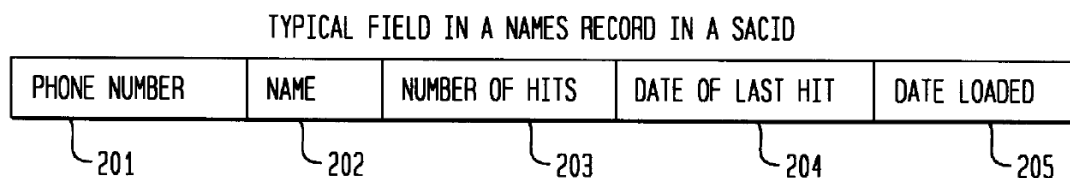
A. Claim 5

Claim 5 depends from claim 4. The combination of *Asmussen*, *Bear*, and *Marley* (Ground 2, Claim 4) teaches the limitations of claim 4. To the extent Maxell contends *Asmussen* in combination with *Marley* does not teach the limitations of Claim 5, as mapped for Ground 2, the combination of *Marley* and *DeFazio* teaches such. For this Ground 3, Claim 5, Apple incorporates by reference the mapping for Ground 2, Claim 5, including *Marley*'s teaching of the processor rendering the camera and microphone operative upon receiving an input for making an outbound videophone call. *DeFazio* teaches the processor displaying information indicating the outbound videophone call on the display calling message, as claimed.

DeFazio teaches a name database “for associating names to calling address data.” *DeFazio* (Ex. 1007), Abstract. The “database provides an efficient and cost-effective database that translates the calling party’s telephone number to the name of the person listed as the subscriber to that telephone number.” *DeFazio*, 1:57-61, 7:67-8:3 (citing use for “television/video conferencing services and the like”), 8:7-

12. Each record stored in the database comprises a telephone number or Internet address, a name, and other related information, as illustrated in Fig. 2:

FIG. 2



DeFazio, Fig. 2, 4:7-12. *DeFazio* further teaches “[o]n an outgoing call, displaying the name of a called party at subscriber display 4a provides feedback that the subscriber dialed the correct telephone number by providing the called party’s **name** (which can supplement a display dialed number arrangement).” *DeFazio*, 5:10-15. *DeFazio* thus teaches displaying information indicating the outbound videophone call, e.g., a dialed number or a called party’s name, on the display calling message. (*Dec.* 183-184).

A POSITA would have found it obvious and been motivated to combine *DeFazio*’s name database that associates a calling number with a name and displaying the name of a called party on the display into the set top terminal, as taught by *Asmussen* in view of *Bear* in further view of *Marley*. *Asmussen* already teaches a display message (Figs. 24a-d), such that modification of the display message to indicate outbound video calling information, as taught by *DeFazio*,

would be readily implementable with mere routine programming well within a POSITA's expertise. (*Dec.* 185). Additionally, use of *DeFazio's* technique of displaying a name associated with a called number on the display, with *Asmussen's* set top terminal that also contains a stored list of telephone numbers and their corresponding text or graphics, entails application of a known technique to improve a similar device in the same way. *Id.* The proposed modification to *Asmussen* would have improved *Asmussen's* set top terminal by allowing the user to see on the display message (as otherwise already taught in *Asmussen*, Figs. 24a-d), information for the outbound video call so that the user would see if they had dialed the correct person, as taught by *DeFazio*. *DeFazio*, 5:10-15. There would have been a reasonable expectation of success for this combination, at least because the system of *Asmussen* is a television/video conferencing apparatus having all of the elements for achieving the functionality taught by *DeFazio*.

B. Claim 12

Claim 12 depends from claim 11. The combination of *Asmussen*, *Bear*, and *Marley* (Ground 2, Claim 11) teaches the limitations of claim 11. For this Claim 12 mapping, Apple incorporates by reference the mapping for Ground 3, Claim 5 and Ground 2, Claim 12.

Regarding the limitation of the claimed functionality being performed “at the same time,” the combination of *Marley* and *DeFazio* results in the called party name

continuing to be displayed with the activation of the camera and microphone, as taught by *Marley*. *Marley's* system will receive the dial command and activate the camera/microphone (per *Marley*, ¶ [0019]) and will also display the called party's number "on an outgoing call" (per *DeFazio*, 5:10-15). (*Dec.* 186). Alternatively, it would have been obvious to display the called party's number at the same time as rendering the camera/microphone operative so that the calling party can see on the display all feedback associated with the outgoing call (e.g., self-image video and called party information). (*Dec.* 187).

IX. GROUND 4: THERE IS A REASONABLE LIKELIHOOD CLAIMS 1 AND 8 ARE OBVIOUS OVER *ASMUSSEN* IN VIEW OF *BEAR* IN FURTHER VIEW OF *LINDSTROM*

The mapping for Claims 1 and 8 in this Ground 4 is substantially similar to the mapping for these claims in Grounds 1 and 2. The only difference is the reliance on *Lindstrom* for the claimed "network interface" receiving both the first and the second digital information, as recited in Claim 1(a). For all claim limitations other than Claim 1(a), Apple incorporates by reference the mapping for Claims 1 and 8 in Grounds 1 and 2.

Regarding Claim 1(a), to the extent Maxell contends *Asmussen's* collective tuner 603 and receiver 750 do not satisfy the claimed "network interface" receiving first and second digital information, *Lindstrom* teaches such. *Lindstrom* teaches a single out-of-band tuner for receiving both video-on-demand information (included

in the claimed “first digital information”) and videocall information (the claimed “second digital information”). *Lindstrom* (Ex. 1008), ¶¶ [0016-0017].

Lindstrom teaches a cable television set top box that contains an “out-of-band” tuner that receives both video-on-demand and videophone signals:

Out-of-band tuner 104 is used primarily to receive and downconvert narrowband data and digital signals to an intermediate frequency (IF)... ***Examples of the types of signals that may be carried on the out-of-band channels received by tuner 104 include***, but are not limited to, Internet data, ***video-on-demand*** and pay-per-view programming, interactive programming guides, interactive games ***and IP telephony and videophone signals***.

Lindstrom, ¶ [0017]. The out-of-band tuner is integrated onto a single integrated chip (IC) with an in-bound-tuner. *Lindstrom*, ¶¶ [0004]-[0005]; ¶¶ [0003], [0011], [0015], [0018] (collectively disclosing a cable television set top box receiver containing a single IC tuner containing both the in-bound and out-of-band tuners, which receive RF signals from a cable line and applied symmetrically to both tuners); *Dec.* 188-189. *Lindstrom* teaches the “presence of multiple tuners permits the simultaneous display of cable television programming along with other digital content.” *Lindstrom*, ¶ [0003]. Figure 1 illustrates the integrated circuit with both the in-band and out-of-band tuners receiving cable signals:

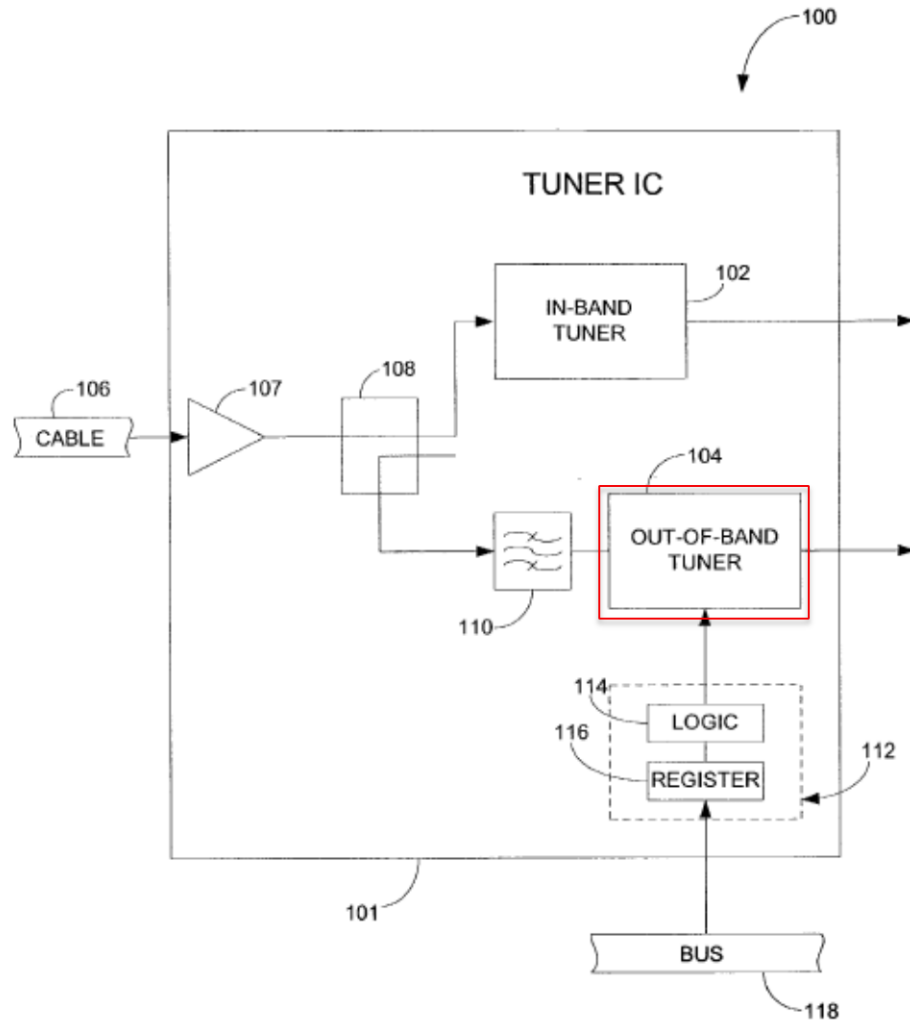


Figure 1

Lindstrom, Fig. 1 (annotated). Because *Lindstrom* teaches a set top box including a single out-of-band tuner receiving both inbound videophone and video-on-demand signals from a cable television network, *Lindstrom*'s out-of-band tuner is a "network interface" configured to receive the first and second digital information, as claimed. (*Dec.* 188-189).

A POSITA would have been motivated and found it obvious to modify *Asmussen* in at least two predictable configurations. In a first configuration, it would have been obvious to substitute *Lindstrom*'s single integrated circuit having both an in-band tuner 102 and an out-of-band tuner 104 for *Asmussen*'s tuner 603 and receiver 750. See *Lindstrom*, ¶¶ [0015-0017]. As stated by *Lindstrom*, “[c]ost advantages could be obtained by combining the in-band and out-of-band tuner functionality on a single integrated chip.” *Lindstrom*, ¶ [0004]. The proposed modification would also achieve power saving functionality described in *Lindstrom*. (Dec. 190-192). The combination would also have had a reasonable expectation of success because both *Asmussen* and *Lindstrom* teach set top terminals that receive cable television signals and are capable of monitoring incoming signals. This substitution would have been simple, requiring only the simple substitution of the known element of *Lindstrom* (i.e., the integrated circuit 100) for the tuner 603 and receiver 750 of *Asmussen*. (Dec. 193, 197).

A second obvious and predictable configuration is to substitute *Asmussen*'s receiver 750 with *Lindstrom*'s out-of-band tuner 104 for the reception of both video-on-demand and videophone signals. (Dec. 195). *Asmussen* already recognizes the need for two tuners when receiving multiple video program signals. *Asmussen*, Fig. 14, 32:45-56. Modifying *Asmussen*'s set top terminal to include two tuners (the existing tuner 603 and the added *Lindstrom* out-of-band tuner 104) would be obvious

in view of *Asmussen*'s teaching of two tuners and would be met with a reasonable expectation of success, especially as *Lindstrom* and *Asmussen* each teaches set top terminals for receipt of cable television signals across a cable television network. (Dec. 196-197). Incorporating two tuners into the *Asmussen* set top box would achieve the power saving functionality taught by *Lindstrom* and allow for simultaneous processing of various types of digital data, as taught by both *Asmussen* and *Lindstrom*. *Lindstrom*, ¶¶ [0003], [0007], [0027-0028]; *Asmussen*, 32:45-56. The proposed substitution requires only a simple substitution of one known element (*Lindstrom*'s tuner out-of-band 104) for another (*Asmussen*'s receiver 750).

A POSITA would thus have found obvious modifying *Asmussen*'s set top terminal to include the *Lindstrom* out-of-band tuner for receiving both video program and videocall information. (Dec. 195-197).

X. GROUND 5: THERE IS A REASONABLE LIKELIHOOD CLAIMS 1-5 AND 8-12 ARE OBVIOUS OVER *ASMUSSEN* IN VIEW OF *BEAR* AND *LINDSTROM* IN FURTHER VIEW OF *MARLEY*

The mapping for Claims 1-5 and 8-12 in this Ground 5 is substantially similar to the mapping for these claims in Ground 2. The only difference is the reliance on *Lindstrom* for the claimed “network interface” receiving both the first and the second digital information, as recited in Claim 1(a). For all claim limitations other than Claim 1(a), Apple incorporates by reference the mapping for Claims 1-5 and 8-12 in Ground 2.

XI. GROUND 6: THERE IS A REASONABLE LIKELIHOOD CLAIMS 5 AND 12 ARE OBVIOUS OVER *ASMUSSEN* IN VIEW OF *BEAR*, *LINDSTROM*, AND *MARLEY* IN FURTHER VIEW OF *DEFAZIO*

The mapping for Claims 5 and 12 in this Ground 6 is substantially similar to the mapping for these claims in Ground 3. The only difference is the reliance on *Lindstrom* for the claimed “network interface” receiving both the first and the second digital information, as recited in Claim 1(a). For all claim limitations other than Claim 1(a), Apple incorporates by reference the mapping for Claims 5 and 12 in Ground 3.

XII. CONCLUSION

For the forgoing reasons, Petitioner respectfully requests *inter partes* review of the Challenged Claims of the '991 Patent.

Respectfully submitted,

BY: /s/ Jennifer C. Bailey
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COUNSEL FOR PETITIONER

XIII. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(a)(1)

A. Real Party-In-Interest

Petitioner Apple Inc. is the real party-in-interest. 37 C.F.R. § 42.8(b)(1).

B. Related Matters

The '991 Patent is asserted in the following pending patent infringement lawsuit filed by Maxell, Ltd.:

United States District Court for the Eastern District of Texas, Texarkana Division, Case No. 5:19-cv-00036-RWS.

This application is a continuation of U.S. Patent Application 15/631,298, filed June 23, 2017, now U.S. Patent 10,070,099 which is a continuation of U.S. Patent Application 15/215,839, filed July 21, 2016, now U.S. Patent No. 9,723,268 which is a continuation of U.S. Patent Application 14/811,048, filed July 28, 2015, now U.S. Patent No. 9,432,618 which is a continuation of U.S. Patent Application 13/723,312, filed December 21, 2012, now U.S. Patent No. 9,124,758 which is a continuation of U.S. Patent Application 12/457,257, filed June 4, 2009, now U.S. Patent No. 8,363,087.

This application is also a priority application to U.S. Patent application 16/110,331, filed August 23, 2018, now U.S. Patent No. 10,389,978, as well as U.S. Patent Application No. 16/506,100, filed July 9, 2019.

C. Lead and Back-Up Counsel

Petitioner provides the following designation and service information for lead and back-up counsel. 37 C.F.R. § 42.8(b)(3) and (b)(4).

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CLAIMS LISTING APPENDIX

U.S. Patent No. 10,084,991, Claims 1-5 and 8-12

Claim Designation	Claim Language
Claim 1 [Preamble]	1. A communication apparatus for transmitting and receiving digital information to and from another communication apparatus, comprising:
Claim 1(a)	a network interface configured to receive first digital information which is received from a contents server which is coupled to the communication apparatus via the network interface and second digital information from the another communication apparatus;
Claim 1(b)	a camera configured to generate video information which is included in third digital information;
Claim 1(c)	a display configured to display at least the first and the second digital information; and
Claim 1(d)	a processor;
Claim 1(e)	wherein when the processor receives an inbound videophone call notice while displaying the first digital information on the display, the processor pauses the displaying of the first digital information and renders the camera operative;
Claim 1(f)	wherein the processor outputs the third digital information to the another communication apparatus and displays the second digital information of the videophone call on the display; and
Claim 1(g)	wherein when the processor receives an input for stopping the videophone call, the processor stops output of the third digital information and stops the camera.
Claim 2	2. The communication apparatus according to claim 1, wherein after the videophone call is finished, the processor restarts the displaying of the first digital information.
Claim 3	3. The communication apparatus according to claim 2, further comprising a microphone configured to generate audio information which is included in the third digital information.

Claim Designation	Claim Language
Claim 4	4. The communication apparatus according to claim 3, wherein when the processor receives the inbound videophone call notice while displaying the first digital information on the display, the processor switches a function of processing video information of the first digital information to a function of processing video information of the second digital information of the videophone call.
Claim 5	5. The communication apparatus according to claim 4, wherein when the processor receives an input for making an outbound videophone call to the another communication apparatus, the processor renders the camera and microphone operative and displays information indicating the outbound videophone call on the display calling message.
Claim 8 [Preamble]	8. A method for transmitting and receiving digital information for a communication apparatus, wherein the communication apparatus comprises a camera, a network interface, a display and a processor; and wherein the method is executed by the processor, the method comprising the steps of:
Claim 8(a)	displaying first digital information which is received from a contents server which is coupled to the communication apparatus via the network interface;
Claim 8(b)	upon receiving an inbound videophone call notice while playing the first digital information, pausing the displaying of the first digital information;
Claim 8(c)	rendering the camera operative;
Claim 8(d)	receiving second digital information from the another communication apparatus via the network interface;
Claim 8(e)	generating video information which is included in third digital information by the camera;
Claim 8(f)	displaying the second digital information on the display; and
Claim 8(g)	outputting the third digital information to an another communication apparatus;
Claim 8(h)	upon receiving an input for stopping the videophone call, stopping output of the third digital information; and

Claim Designation	Claim Language
Claim 8(i)	stopping the camera.
Claim 9	9. The method according to claim 8, further comprising the step of: restarting the displaying of the first digital information after the videophone call is finished.
Claim 10	10. The method according to claim 9, wherein the communication apparatus further comprises a microphone, and the method further comprising the step of: generating audio information which is included in the third digital information by the microphone.
Claim 11	11. The method according to claim 10, further comprising the step of: upon receiving the inbound videophone call notice while displaying the first digital information, switching a function of processing video information of the first digital information to a function of processing video information of the second digital information of the videophone call.
Claim 12	12. The method according to claim 11, further comprising the steps of: upon receiving an input for making an outbound videophone call to the another communication apparatus, rendering the camera and microphone operative; and displaying information indicating the outbound videophone call on the display at the same time.

APPENDIX OF EXHIBITS

Exhibit 1001	U.S. Patent No. 10,084,991 (“’991 Patent”)
Exhibit 1002	File History of U.S. Patent No. 10,084,991 (“ <i>File History for ’991 Patent</i> ”)
Exhibit 1003	Declaration of Dr. Andrew Lippman, PhD (including Appendices A and B) (“ <i>Dec.</i> ”)
Exhibit 1004	U.S. Patent No. 7,565,680 to Asmussen (“ <i>Asmussen</i> ”)
Exhibit 1005	U.S. Patent No. 7,584,255 to Bear (“ <i>Bear</i> ”)
Exhibit 1006	U.S. Patent Pub. No. 2007/0139514 to Marley (“ <i>Marley</i> ”)
Exhibit 1007	U.S. Patent No. 5,940,484 to DeFazio (“ <i>DeFazio</i> ”)
Exhibit 1008	U.S. Patent Application No. Pub. No. 2004/0031064 to Lindstrom et al (“ <i>Lindstrom</i> ”)
Exhibit 1009	Docket Control Order, <i>Maxell Ltd. v. Apple Inc.</i> , No. 5:19-cv-0036-RWS (E.D. Tex. July, 9, 2019), ECF No. 46
Exhibit 1010	U.S. Patent No. 8,363,087 to Iwabuchi (“’087 Patent”)
Exhibit 1011	File History of U.S. Patent No. 8,363,087 (“ <i>File History for ’087 Patent</i> ”)
Exhibit 1012	U.S. Patent No. 6,493,020 to Stevenson (“ <i>Stevenson</i> ”)
Exhibit 1013	U.S. Patent No. 6,134,223 to Burke (“ <i>Burke</i> ”)
Exhibit 1014	U.S. Patent No. 8,458,756 to Rodriguez (“ <i>Rodriguez</i> ”)
Exhibit 1015	U.S. Patent No. 7,373,650 to Rodriguez (“ <i>Rodriguez ’650</i> ”)
Exhibit 1016	Explorer® Digital Video Recorder - Users Guide (“ <i>Explorer User Guide</i> ”)
Exhibit 1017	“So far, interactive TV is no match for the mall” - Tampa Bay Times (St. Petersburg, Florida) June 5, 1995 (“ <i>Time Warner Full Service Network</i> ”)
Exhibit 1018	“Comcast rolls out video on demand” - Sunday News (Lancaster, Pennsylvania) Nov. 3, 2002 (“ <i>Comcast Video on Demand</i> ”)

CERTIFICATION OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. § 42.24 that the foregoing Petition for *Inter Partes* Review (Claims 1-20 and 41-55), excluding any table of contents, mandatory notices under 37 C.F.R. § 42.8, certificates of service or word count, or appendix of exhibits or claims listing, contains 13,897 words according to the word-processing program used to prepare this document (Microsoft Word).

Dated: December 19, 2019

BY: /s/ Jennifer C. Bailey
Jennifer C. Bailey, Reg. No. 52,583

COUNSEL FOR PETITIONER

**CERTIFICATE OF SERVICE ON PATENT OWNER
UNDER 37 C.F.R. § 42.105**

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105, the undersigned certifies that on December 19, 2019, a complete and entire copy of this Petition for *Inter Partes* Review including exhibits was provided via Federal Express to the Patent Owner by serving the correspondence address of record for the '991 Patent as listed on PAIR:

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