

APPENDIX

APPENDIX

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APPENDIX A

NOTE: This disposition is nonprecedential.

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

2016-2468, 2016-2492

[Filed November 1, 2017]

DRAGON INTELLECTUAL)	)
PROPERTY, LLC,)	)
<i>Appellant</i>)	)
)	)
v.)	)
)	)
DISH NETWORK LLC,)	)
SIRIUS XM RADIO INC.,)	)
<i>Appellees</i>)	)
)	)

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2015-00499, IPR2015-01735.

Decided: November 1, 2017

LEI MEI, Mei & Mark LLP, Washington, DC, argued for appellant. Also represented by LAURENCE M. SANDELL.

ELIOT DAMON WILLIAMS, Baker Botts LLP, Palo Alto, CA, argued for appellee DISH Network LLC. Also

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represented by GEORGE HOPKINS GUY, III; JAMIE ROY LYNN, Washington, DC.

MARK BAGHDASSARIAN, Kramer Levin Naftalis & Frankel LLP, New York, NY, argued for appellee Sirius XM Radio Inc. Also represented by SHANNON H. HEDVAT.

Before MOORE, MAYER, and STOLL, *Circuit Judges*.
STOLL, *Circuit Judge*.

Appellees Dish Network LLC and Sirius XM Radio Inc. (collectively, “Dish”) sought inter partes review of claims 1–4, 7–10, 13, and 14 of U.S. Patent No. 5,930,444 before the U.S. Patent and Trademark Office’s Patent Trial and Appeal Board. The Board instituted review and, in its final written decision, found all of the challenged claims obvious over the prior art. Dragon Intellectual Property, owner of the ’444 patent, appeals the Board’s decision. We affirm.

BACKGROUND

The ’444 patent discloses a “simultaneous recording and playback apparatus.” ’444 patent col. 1 ll. 1–2. The patent explains that the apparatus allows a user who missed a portion of a live broadcast due to a brief interruption (e.g., a telephone call) to record the missed portion. At the end of the interruption, the user can then immediately watch the missed portion without having to either “watch the recorded interrupted portion of the programming after having watched the end of the programming” or skip watching the recording altogether due to its diminished value after having seen the end of the programming. *Id.* at col. 1 ll. 56–58. Dragon explains that this feature is similar to

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the “live pause” function of many digital video recorder devices available today.

The independent claims at issue are claims 1 and 14.¹ Claim 1 recites:

1. A recording and playback apparatus for the substantially immediate and seamless resumption of interrupted perception of broadcast program information based upon audio or video signals, or both, without missing the program information presented during the interruption, comprising:

means for powering the apparatus;

a keyboard having a record key and a playback key;

a control circuit coupled responsively to said keyboard;

a memory unit coupled responsively to said control circuit, said memory unit having a medium for storage of information, said storage medium having structure which enables substantially random access to information stored in said medium for retrieval of the stored information from said storage medium;

at least one input, said input being connected to a user's audio/video program signal source and also being coupled to said memory unit so as to enable program information presented by the

¹ As relevant to this appeal, claim 1 is representative.

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signal source to be transferred to and stored in said memory unit; and

at least one output, said output being connected to a user's audio or video display device or both, said output further being connected to said memory unit so as to enable the transfer of program information from said memory unit to the user's display device,

said control circuit being configured so that substantially simultaneous recording and playback of program information is achieved when

said record key is first actuated to begin a recording by initiating storage of the broadcast program information in said memory unit, and

said playback key is subsequently and *solely* actuated to begin time delay playback of the recording from the beginning thereof by initiating retrieval of the stored program information in said memory unit,

with the interval of the time delay being the same as the time elapsed between the actuation of said record key and the subsequent actuation of said playback key.

Id. at col. 8 ll. 28–64 (emphasis and spacing added to highlight disputed claim limitation).

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The Board found claims 1, 7–10, and 14 invalid as obvious over U.S. Patent No. 5,241,428 (“Goldwasser”) and U.S. Patent No. 5,126,982 (“Yifrach”), and claims 2–4 and 13 invalid as obvious over Goldwasser, Yifrach, and another publication not relevant to this appeal.

Dragon appeals the Board’s obviousness determinations. We have subject matter jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

Dragon’s argument on appeal centers on a single limitation in the independent claims. In relevant part, claim 1 recites a “control circuit” with a “playback key” that is “*solely* actuated” to begin the time-delay playback of a specific recording. ’444 patent col. 8 ll. 53–62 (emphasis added).

Dragon argues that the Board failed to meaningfully address the “solely” limitation in its Final Written Decision, and that the record is devoid of substantial evidence to support the Board’s finding that the prior art teaches the “solely” limitation. In response, Dish argues that Dragon waived its arguments on the “solely” limitation. We address Dish’s waiver argument first, followed by Dragon’s non-obviousness arguments.

Dish argues that by not presenting arguments specific to the “solely” limitation prior to the oral hearing before the Board, Dragon abandoned this argument and cannot raise it on appeal. We disagree. While the “solely” limitation was not the only focus of Dragon’s arguments prior to oral hearing, the limitation was raised as part of Dragon’s broader arguments directed to the “control circuit” and the

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“playback key.” For example, Dragon argued in its Patent Owner’s Response before the Board that the Goldwasser/Yifrach combination fails to teach or suggest the “control circuit” of claim 1, which, “[i]n particular,” is “configured to achieve ‘substantially simultaneous recording and playback’ when . . . the ‘playback key is subsequently and *solely* actuated to begin time delay playback of the recording from the beginning thereof.” J.A. 1167 (emphasis added). Also, when Dragon presented arguments specific to the “solely” limitation during oral hearing before the Board, neither the Board nor Dish treated the argument as a new argument. Indeed, Dish did not argue waiver; nor did the Board find waiver. Moreover, the Board decided the issue on the merits in its decision. For these reasons, we reject Dish’s waiver argument.²

We next consider Dragon’s arguments challenging the Board’s obviousness determination. Obviousness under § 103 is a mixed question of law and fact. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). We review the Board’s ultimate obviousness determination de novo and underlying factual findings for substantial evidence. *Id.* “Substantial evidence is something less than the weight of the evidence but more than a mere scintilla of evidence,” meaning that “[i]t is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.” *In re NuVasive, Inc.*, 842 F.3d 1376, 1379–80 (Fed. Cir. 2016) (internal quotation marks and citations omitted).

² We deny Dish’s motion for sanctions under Rule 38 for the same reasons.

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Dragon argues that the record lacks sufficient substantial evidence “to find [the ‘solely’ limitation] satisfied.” Appellant Br. 19. Specifically, Dragon argues that Goldwasser alone does not teach the “solely” limitation, and that the Board and Dish did not rely on Yifrach for the “solely” limitation.

We agree with Dragon that Goldwasser alone does not teach the “solely” limitation. Goldwasser teaches a simultaneous recording and playback device that addresses the scenario in which a viewer watching a program “must temporarily cease watching it” to, for example, “take a telephone call or the like,” and would like to “record the program from that point forward, complete the telephone call,” and then “watch the remainder delayed by the length of time of the interruption.” *Goldwasser* at col. 1 ll. 43–53. Although Goldwasser teaches a user control panel to control its recording and playback functions, Goldwasser does not describe the control panel in detail and therefore does not teach whether a playback key is “solely” depressed to enable playback.

Goldwasser as modified by Yifrach, however, renders the “solely” limitation obvious. Yifrach teaches a radio receiver and buffer system that “enables the listener not only to hear the radio broadcasts in a real-time manner, but also to freeze a portion of the broadcast for later playback whenever desired.” *Yifrach* at col. 4 ll. 15–18. The Yifrach system includes a logic circuit “controlled by two depressible buttons”—a Freeze button and a Playback button. *Id.* at col. 4 ll. 27–29. Depressing the Freeze button starts a recording, while depressing the Playback button causes playback of the recording that had been “frozen” by

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depressing the Freeze button.” *Id.* at col. 4 ll. 63–68. In teaching the use of only one button to “select the Playback Mode,” *id.*, Yifrach teaches that the Playback button is “solely” depressed to begin playback of the recording.

We disagree with Dragon’s contention that the Board and Dish did not rely on Yifrach in their analysis of whether the prior art teaches the “solely” limitation. Contrary to Dragon’s contention, the Board specifically found that the “solely” limitation was taught by the combination of Goldwasser and Yifrach. *See, e.g., Dish Network L.L.C.*, No. IPR2015-00499, 2016 WL 3268756, at *8 (PTAB June 15, 2016). Indeed, the Board stated:

Goldwasser’s address controller, *when viewed in light of Yifrach’s two-button interface* and Goldwasser’s user control panel, would have taught one of ordinary skill in the art a control circuit configured to allow for simultaneous recording when the record key is actuated to begin a recording and playback when the playback key is subsequently and *solely* actuated to begin playback.

Id. (emphases added). Similarly, Dish relied on Yifrach in its petition when addressing the “solely” limitation. *See, e.g., J.A.* 88–90 (citing *Yifrach* at col. 4 l. 46 – col. 5 l. 6, and Figure 2); *J.A.* 91 (concluding that “[implementing] Goldwasser’s control panel 50 as ‘a keyboard having a record key and a playback key’” would be obvious based in part on the assertion that “Yifrach discloses a keyboard with a separate key to record and playback recorded program information”).

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Dragon also argues that the Board failed to meaningfully address the “solely” limitation in its obviousness analysis. We disagree. The Board in several instances explained that Goldwasser in view of Yifrach teaches the claimed playback key or two-button interface. In doing so, the Board used the term “playback key” as shorthand to refer to an entire claim element, which includes the “solely” term, and states: “said playback key is subsequently and *solely* actuated to begin time delay playback of the recording from the beginning thereof by initiating retrieval of the stored program information in said memory unit.”⁴⁴⁴ patent col. 8 ll. 57–61. Therefore, in addressing the “playback key,” the Board also addressed the “solely” limitation.³ *See, e.g., Dish*, 2016 WL 3268756, at *6 (finding that in Yifrach, recorded material may be “played back when the user depresses the playback button” and “Yifrach’s playback and freeze keys combined with Goldwasser’s simultaneous recording and playback would have taught one of ordinary skill in the art the claimed ‘keyboard having a record key and a playback key’”).

We also read the Board’s discussion of Yifrach’s two-button interface as addressing the “solely” limitation, since depressing Yifrach’s freeze button starts a recording and depressing Yifrach’s playback button starts playback of that recording. *See, e.g., id.* (“Yifrach is a reference that uses such a two-button interface.”); *id.* at *8 (“We find that Goldwasser’s address

³ The Board’s treatment of the “solely” limitation as part of the “playback key” limitation is consistent with Dragon’s own treatment of the limitation. *See J.A.* 1163–72 (discussing the “solely” limitation only as a part of its arguments on “control circuit” and “keyboard having a record key and a playback key”).

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controller, when viewed in light of Yifrach's two-button interface and Goldwasser's user control panel, would have taught one of ordinary skill in the art a control circuit configured to allow for simultaneous recording when the record key is actuated to begin a recording and playback when the playback key is subsequently and solely actuated to begin playback."); *id.* ("Petitioner's ground is directed to implementing Goldwasser's user control panel with a two-button user interface as described in Yifrach."). For these reasons, we reject Dragon's argument that the Board failed to meaningfully address the "solely" limitation.

CONCLUSION

We have considered the parties' remaining arguments and find them unpersuasive. For the reasons stated above, we affirm the Board's obviousness determinations as to claims 1–4, 7–10, 13, and 14.

AFFIRMED

COSTS

No costs.

APPENDIX B

**UNITED STATES PATENT
AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL
AND APPEAL BOARD**

**Case IPR2015-00499¹
Patent 5,930,444**

[Filed June 15, 2016]

DISH NETWORK L.L.C.,	)
and SIRIUS XM RADIO INC.,	)
Petitioner,	)
	)
v.	)
	)
DRAGON INTELLECTUAL	)
PROPERTY, LLC,	)
Patent Owner.	)

Paper 34

Before NEIL T. POWELL, STACEY G. WHITE, and J.
JOHN LEE, *Administrative Patent Judges*.

WHITE, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

¹ Case IPR2015-01735 has been joined with this proceeding

I. INTRODUCTION

DISH Network L.L.C. filed a Petition requesting *inter partes* review of claims 1–10, 13, and 14 of U.S. Patent No. 5,930,444 (Ex. 1001, “the ’444 patent”). Paper 1 (“Pet.”). Dragon Intellectual Property, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6. Based on our review of these submissions, we instituted *inter partes* review of claims 1–4, 7–10, 13, and 14 of the ’444 patent on the proposed grounds of unpatentability under 35 U.S.C. § 103. Paper 7 (“Dec.”). Specifically, we authorized this *inter partes* review to proceed as to the following grounds: (1) claims 1, 7–10, and 14 as obvious over Goldwasser² and Yifrach;³ and (2) claims 2–4 and 13 as obvious over Goldwasser, Yifrach, and Vogel.⁴ *Id.* at 20.

After institution, Sirius XM Radio Inc. filed a petition requesting *inter partes* review of the ’444 patent on the same grounds asserted by Dish Network and a motion seeking joinder with this proceeding. *Sirius XM Radio Inc. v. Dragon Intellectual Prop., LLC*, Case IPR2015-01735, Papers 1 (petition), 3 (motion for joinder). Patent Owner filed a partial opposition to Sirius XM’s motion for joinder. IPR2015-01735, Paper 7. We instituted an *inter partes* review and joined it with the case at bar. Paper 30.

² U.S. Patent No. 5,241,428, filed Mar. 12, 1991, issued Aug. 31, 1993 (“Goldwasser”) (Ex. 1005).

³ U.S. Patent No. 5,126,982, filed Sept. 10, 1990, issued June 30, 1992 (“Yifrach”) (Ex. 1003).

⁴ PCT Pub. WO 90/15507, published Dec. 13, 1990 (“Vogel”) (Ex. 1004).

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Patent Owner filed a Patent Owner's Response (Paper 12, "PO Resp."), and Petitioner⁵ filed a Reply (Paper 27, "Reply"). An oral hearing was conducted on February 9, 2016. A transcript of the oral hearing is included in the record. Paper 33 ("Tr.").

We have jurisdiction under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of claims 1–4, 7–10, 13, and 14. For the reasons discussed below, Petitioner has demonstrated by a preponderance of the evidence that claims 1–4, 7–10, 13, and 14 are unpatentable.

A. Related Proceedings

Petitioner informs us that the '444 patent is at issue in *Dragon Intellectual Property, LLC v. DISH Network L.L.C.*, No. 13–CV–2066 (RGA) (D. Del). Pet. 1. In addition, the '444 patent was at issue in IPR2014-01252, and a final written decision was entered in that proceeding finding claims 1, 2, 7, 8, 10, 13, and 14 to be unpatentable. *Unified Patents Inc., v. Dragon Intellectual Prop., LLC*, Case IPR2014-01252, slip op. at 21 (Feb. 5, 2016) (Paper 64). An appeal of that case currently is pending before the Federal Circuit.

B. The '444 Patent (Ex. 1001)

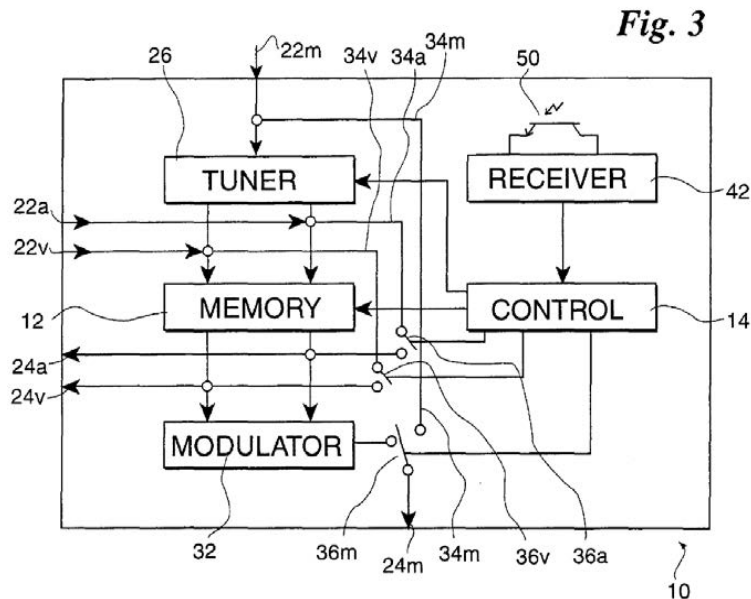
The '444 patent discusses disadvantages in regards to known video cassette recorders' ("VCRs") inability to record and playback simultaneously. Ex. 1001, 1:47–2:35. The '444 patent notes that a person may encounter interruptions such as telephone calls while

⁵ We refer to Dish Network and Sirius XM Radio collectively as "Petitioner."

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viewing a program. *Id.* at 1:47–49. The '444 patent explains that known VCRs allow a user to record the portion of the program starting at the time of the interruption for later viewing. *Id.* at 1:50–58. Such VCRs, however, did not allow the user to watch immediately the remainder of the program from the point of the interruption to the end of the program. *Id.* at 1:50–2:14.

The '444 patent addresses these issues with an audiovisual recording and playback device that provides substantially simultaneous recording and playback, allowing user-controlled programming delay. *Id.* at Abstract. An embodiment of such a recording and playback device is depicted in Figure 3 of the '444 patent, reproduced below.



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Figure 3 depicts recorder 10 and its components, including memory unit 12; control circuit 14; inputs 22a, 22v, and 22m; outputs 24a, 24v, and 24m; tuner 26; modulator 32; and receiver 42. *Id.* at 3:54–64, 4:35–53, 4:59–5:4, 6:7–18. An embodiment of a remote control unit for use with recorder 10 is depicted in Figure 5, reproduced below.

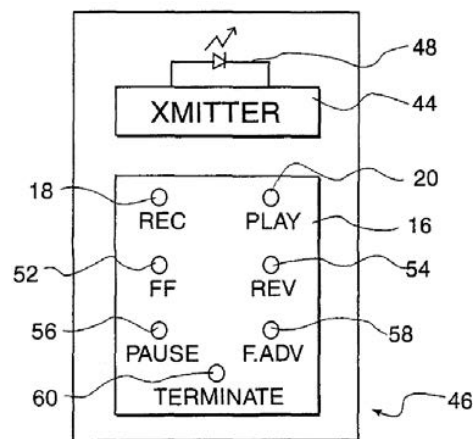


Fig. 5

Figure 5 shows remote control unit 46 and its components, including keyboard 16 and transmitter 44. *Id.* at 6:7–12, 6:25–28. Transmitter 44 of remote control unit 46 and receiver 42 of recorder 10 provide communication between remote control unit 46 and recorder 10. *Id.* at 6:8–28. Keyboard 16 has a number of keys, including record key 18 and playback key 20. *Id.* at 3:65–67.

A user may actuate record key 18, for example, when a telephone call interrupts a program. *Id.* at 5:20–24. In response, control circuit 14 begins storing within memory unit 12 information received via input 22. *Id.* at 5:24–25. When the interruption ends, the

user may actuate playback key 20. *Id.* at 5:25–27. In response, the system retrieves and displays the recorded information, starting from the point of the interruption, while simultaneously continuing to store information from input 22. *Id.* at 5:25–36.

C. Illustrative Claim

Petitioner challenges claims 1–4, 7–10, 13, and 14 of the '444 patent of which claims 1 and 14 are independent. Claim 1 is illustrative of the challenged claims and is reproduced below:

1. A recording and playback apparatus for the substantially immediate and seamless resumption of interrupted perception of broadcast⁶ program information based upon audio or video signals, or both, without missing the program information presented during the interruption, comprising:
 - means for powering the apparatus;
 - a keyboard having a record key and a playback key;
 - a control circuit coupled responsively to said keyboard;
 - a memory unit coupled responsively to said control circuit, said memory unit having a medium for storage of information, said storage medium

⁶ A Certificate of Correction was issued March 5, 2013, replacing “perception of program information” with “perception of broadcast program information.” Ex. 1001, 14.

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having structure which enables substantially random access to information stored in said medium for retrieval of the stored information from said storage medium;

- at least one input, said input being connected to a user's audio/video program signal source and also being coupled to said memory unit so as to enable program information presented by the signal source to be transferred to and stored in said memory unit; and
- at least one output, said output being connected to a user's audio or video display device or both, said output further being connected to said memory unit so as to enable the transfer of program information from said memory unit to the user's display device, said control circuit being configured so that substantially simultaneous recording and playback of program information is achieved when said record key is first actuated to begin a recording by initiating storage of the broadcast program information in said memory unit, and said playback key is subsequently and solely actuated to begin time delay playback of the recording from the beginning thereof by initiating retrieval of the stored program information in said memory unit, with

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the interval of the time delay being the same as the time elapsed between the actuation of said record key and the subsequent actuation of said playback key.

Ex. 1001, 8:29–64.

II. ANALYSIS

A. *Claim Interpretation*

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,764 (Aug. 14, 2012). Pursuant to that standard, the claim language should be read in light of the specification, as one of ordinary skill in the art would interpret it. *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010). Thus, absent any special definitions, we give claim terms their ordinary and customary meaning, as would be understood by one of ordinary skill in the art at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms must be set forth with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

For purposes of the Decision to Institute, we construed the terms (1) “means for powering the apparatus,” (2) “means for wireless communication between said remote control and said control circuit,” and (3) “key means.” Dec. 8–9. Neither party raised any concerns regarding these constructions during trial.

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Based on our review of the full record, we discern no reason to modify or further discuss in this Final Written Decision our constructions for these claim phrases. For convenience, those claim constructions are reproduced in the table below.

Term	Support	Recited Function / Corresponding Structure
“means for powering the apparatus” (Claim 1)	Ex. 1001, 6:20–24	Function: “powering the apparatus” Structure: A/C power source or alternative power sources such as D/C power or batteries
“means for wireless communication between said remote control and said control circuit” (Claim 3)	Ex. 1001, 6:7–18, Figs. 3, 4	Function: “wireless communication between said remote control and said control circuit” Structure: Receiver and transmitter interposed between the control circuit and keyboard for communication there between

“key means” (Claim 8)	Ex. 1001, 6:24–45, Fig. 5	Function: “enabling user control of the rate or sequence or both of transfer of program information from said memory unit to the user’s display device, and such variation of rate or sequence results in a corresponding variation of the interval of the time delay” Structure: keys on the keyboard that, when actuated, cause the control circuit to vary the rate or sequence or both of the transfer of program information from the memory unit to the user’s display device
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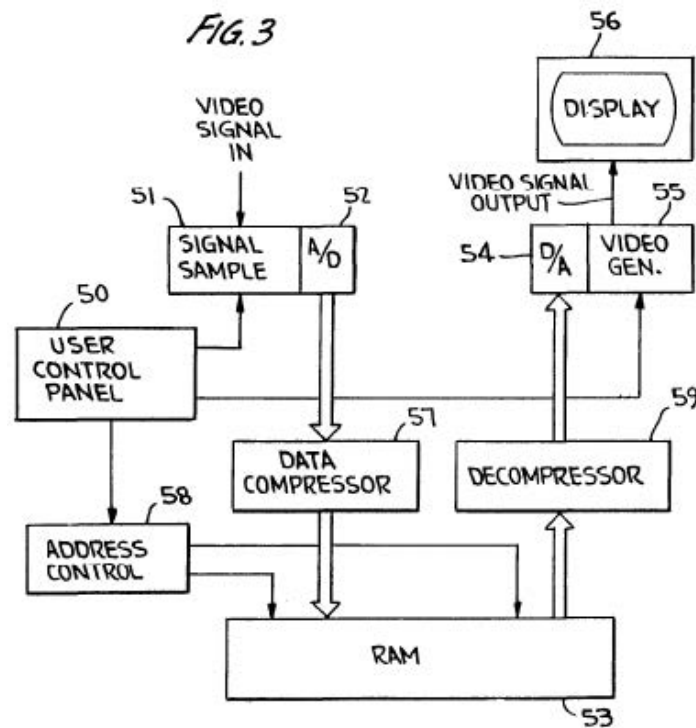
B. Obviousness of Claims 1, 7–10, and 14 over Goldwasser and Yifrach

Petitioner alleges that claims 1, 7–10, and 14 of the ’444 patent are unpatentable under 35 U.S.C. § 103 over Goldwasser and Yifrach. Pet. 41–56. Petitioner relies on a Declaration from Anthony J. Wechselberger. Ex. 1010. For the reasons discussed below, we conclude that Petitioner has established by a preponderance of the evidence that claims 1, 7–10, and 14 would have been obvious over Goldwasser and Yifrach.

1. Overview of Goldwasser (Ex. 1005)

Goldwasser is a United States Patent titled “Variable-Delay Video Recorder” that issued August 31, 1993, from an application filed March 12, 1991. Ex. 1005, at [22], [45], [54]. Goldwasser describes “[a] video recorder and playback device allowing simultaneous recording and playback of program material.” *Id.* at Abstract. One of the problems that Goldwasser purports to solve is the inconvenience that arises from the inability of conventional VCRs to allow a user to view material as it is being recorded. *Id.* at 1:29–42. For example, “often one will be watching a particular program when one must temporarily cease watching it, for example, to take a telephone call or the like. It would obviously be convenient to be able to record the program from that point forward, complete the telephone call, and simply watch the remainder delayed by the length of time of the interruption.” *Id.* at 1:43–49.

One embodiment disclosed by Goldwasser is a “random access’ embodiment” whereby the video signal is converted to a digital signal and recorded in random access memory, which could include magnetic or optical media or solid state memory. *Id.* at 2:16–21. This random access embodiment is depicted in Figure 3 of Goldwasser, reproduced below.



Goldwasser's Figure 3 is a schematic diagram of its random access embodiment. *Id.* at 3:49–50. The recording device depicted in Figure 3 includes signal sampling circuit 51 and analog-to-digital converter 52, which are used together to create digital samples of the video signal being record. *Id.* at 6:25–28. These samples are stored in random access memory 53. *Id.* at 6:28–29. Address controller 58 controls the storage of these digitized video samples and is responsive to commands from user control panel 50. *Id.* at 6:44–48. Playback can take place from any portion of the memory at any speed without impacting the recording. *Id.* at 6:38–40.

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2. Overview of Yifrach (Ex. 1003)

Yifrach is a United States Patent titled “Radio Receiver and Buffer System Therefore” that issued June 30, 1992, from an application filed September 10, 1990. Ex. 1003, at [22], [45], [54]. Figure 2 of Yifrach is reproduced below.

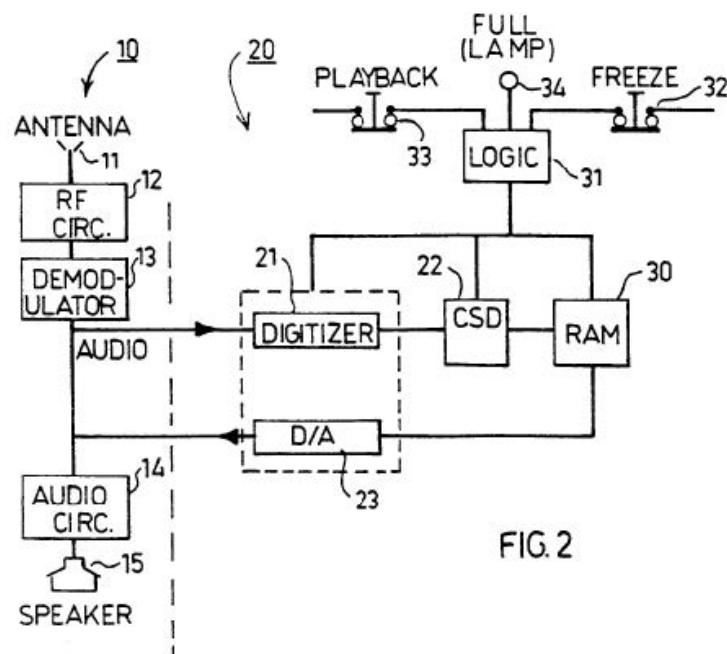


Figure 2 is a block diagram of an embodiment that “enables the listener not only to hear the radio broadcasts in a real-time manner, but also to freeze a portion of the broadcast for later playback.” *Id.* at 4:14–18. Yifrach’s “Normal-Listening Mode” allows users to listen to a broadcast in real time. *Id.* at 3:40–44. A user may interrupt the real-time broadcast by depressing freeze button 32. *Id.* at 4:46–47. Freeze

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button 32 controls logic circuit 31, and depressing this button causes the system to enter Freeze Mode. *Id.* In Freeze Mode, the last sixty seconds of the broadcast are stored in further storage device 30, and cyclic storage device 22 continues to store the audio signal. *Id.* at 4:51–56. The listener can playback the frozen portion of the broadcast at any time by depressing Playback button 33, which controls logic circuit 31 and causes the device to enter Playback Mode. *Id.* at 4:63–67. After the frozen portion has been played, the system automatically returns to Normal-Listening Mode. *Id.* at 5:3–6.

3. *Analysis*

Independent claim 1 recites a recording and playback apparatus for the substantially immediate and seamless resumption of interrupted perception of program information. Ex. 1001, 8:28–31. Independent claim 14 recites a method for enabling the substantially immediate resumption of perception of broadcast program information. *Id.* at 10:4–6. We analyze these claims together because there is considerable overlap as to their limitations.

Petitioner relies upon Goldwasser’s teaching for essentially all of the elements of independent claims 1 and 14 with the exception of the claimed keyboard with a record and playback key. Tr. 5:19–21. Specifically, Petitioner relies upon Goldwasser’s teaching of a recording device that allows for simultaneous playback and recording of a broadcast program. Pet. 41–42; *see also* PO Resp. 10 (describing Goldwasser as disclosing a device in which “reading and writing [of video signals] may be done simultaneously”). As described in Goldwasser, recording is controlled by address

controller 58, which is responsive to commands received from user control panel 50. *See* Pet. 40–41; *see also* PO Resp. 10–11 (noting that the address controller controls where video signals are stored and is responsive to the user control panel). The user control panel may be used to send an interrupt that varies the playback of video recorded by the device. Ex. 1005, 7:7–18. Goldwasser, however, does not provide a detailed description of the user control panel and thus lacks an explicit teaching of a keyboard. Pet. 43–46. Thus, Petitioner relies upon the teaching of Yifrach, specifically its freeze and playback buttons, to disclose the claimed keyboard with playback and record keys. *Id.* Petitioner’s contentions and evidence demonstrate persuasively that the combination of Goldwasser and Yifrach teach or suggest the limitations of claims 1 and 14.

Patent Owner raises several arguments in response to Petitioner’s assertions. Specifically, Patent Owner contends that (1) the cited art does not teach the recited keyboard having a record key and a playback key (PO Resp. 12–23), (2) the cited art does not teach the recited control circuit (*id.* at 23–29), and (3) there is no motivation to combine Goldwasser and Yifrach (*id.* at 29–38). We shall address each argument in turn.

First, Patent Owner argues that “a keyboard having a record key and a playback key” is not taught by the cited art. *Id.* at 12–23. Petitioner relies upon Goldwasser to teach a “user control panel” that controls the location from which video is stored and by which a user can control the recording and playback of video. Pet. 45 (citing Ex. 1005, 6:44–49; Ex. 1010 ¶ 132). Goldwasser, however, does not provide details as to the

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user control panel. In addition, Goldwasser indicates that a key pad could be used to control at least one embodiment of its device. *See* Ex. 2004, 43:16–44:5; Ex. 1005, 8:9–13 (describing a “multiple tape” embodiment that is controlled by a microprocessor “responsive to user controls input at a key pad, remote control device or the like”). As with the aforementioned user control panel, however, there is no discussion or description of what is to be found on this key pad. *See* Ex. 2001 ¶ 27. Goldwasser discloses that a user can pause a recording and resume playback, but it does not provide specifics as to the user interface that allows the user to perform these actions. *See* Pet. 45–46 (citing Ex. 1005, Abstract, 1:56–60). Thus, Petitioner relies upon Yifrach to provide a teaching of record and playback keys. *Id.* at 46. Yifrach teaches freeze button 32 and playback button 33, which, in conjunction with the teachings of Goldwasser’s user control panel, are relied upon to teach the claimed record and playback buttons. Pet. 45.

Petitioner cites Yifrach’s freeze and playback keys, which are used in “Normal-Listening Mode.” Pet. 46 (citing Ex. 1003, Fig. 2, 4:63–5:6; Ex. 1010 ¶¶ 135–137). In Normal-Listening Mode, audio is stored continuously to cyclic storage device 22. Ex. 1003, 3:18–24. This buffering permits the user to hear the broadcast in a continuous manner and allows the user to rehear portions of the broadcast on demand. *Id.* at 1:52–58; Ex. 1010 ¶ 136. The freeze button allows users to record the last sixty seconds of the broadcast to another buffer, the further storage device. This recorded audio may then be played back when the user depresses the playback button. Pet. 45 (citing Ex. 1003, 4:63–5:6, Fig. 2). Under the Petitioner’s proposed

ground, this teaching is to be viewed in conjunction with the teaching of Goldwasser, which allows the user “to pause playback for a variable period of time without interrupting the recording.” Ex. 1005, Abstract; Pet. 44.

Patent Owner argues that these teachings are insufficient to render obvious the claimed record and playback key. According to Patent Owner, Yifrach’s freeze key is “manifestly different” from the recited record key. PO Resp. 17 (citing Ex. 2001 ¶¶ 33–37). As noted by Patent Owner, actuating Yifrach’s freeze key causes the device to “transfer[] the already recorded content in the cyclic storage device to the further storage device.” *Id.* (citing Ex. 2004, 60:19–61:3). Patent Owner’s declarant, Mr. Adam Goldberg, asserts that a button that causes the transfer of previously recorded data to another storage device does not render obvious the claimed record button because it does not “begin a recording.” Ex. 2001 ¶¶ 36–39; PO Resp. 19. Patent Owner asserts that transferring previously recorded data from one buffer to another would have been understood by one of ordinary skill in the art to be copying and not recording. PO Resp. 19–20.

Petitioner responds by stating that “the functionality that occurs in Yifrach when these buttons are activated is irrelevant to the Grounds of unpatentability. As to the claimed functionality, Petitioner relies on the control circuit functionality of Goldwasser, not Yifrach.” Reply 3 (citing Pet. 43–47, 56). In other words, Petitioner is relying upon Yifrach to teach the two-button interface and not the actions that occur when those buttons are pushed. Petitioner’s declarant Mr. Wechselberger testifies that “the use of a separate ‘Freeze’ and ‘Playback’ buttons, as disclosed

in Yifrach . . . was a well-known user interface design choice to a person of ordinary skill in the art at the time of the alleged invention.” Ex. 1010 ¶ 91. Yifrach is a reference that uses such a two-button interface. Goldwasser included a detailed description of the simultaneous recording and playback found in the limitations of claims 1 and 14. Thus, when the teachings are viewed together, they would have taught the whole of the disputed limitations. “Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.” *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citing *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)). Therefore, our analysis must go further than reviewing what is taught by each isolated reference. Instead, we must focus on what one of ordinary skill in the art would learn from the combination of teachings found in the cited references. *Id.* Pursuant to such analysis, we find that Yifrach’s playback and freeze keys combined with Goldwasser’s simultaneous recording and playback would have taught one of ordinary skill in the art the claimed “keyboard having a record key and a playback key.”

Patent Owner further notes that Goldwasser discloses starting a recording using stored instructions and not by actuating a record key. PO Resp. 22 (citing Ex. 1005, Abstract). According to Patent Owner, one of ordinary skill in the art would not have been motivated to modify Goldwasser’s user control panel to use keys instead of stored instructions. *Id.* Goldwasser, however, does not describe the user control panel’s user interface. Mr. Wechselberger testified that the use of buttons as disclosed in Yifrach “was a well-known user

interface design choice to a person of ordinary skill in the art at the time of the alleged invention.” Ex. 1010 ¶¶ 91, 151. Mr. Wechselberger also testified that record and playback buttons were found on all VCRs since at least the 1980s. *Id.* ¶ 26. We find that it would not have been beyond the skill of an ordinarily skilled artisan to implement Goldwasser’s user control panel with keys as recited in Yifrach. See *KSR Int’l v. Teleflex*, 550 U.S. 398, 417 (2007) (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.”). Thus, we find that one of ordinary skill in the art would have been motivated to implement Goldwasser’s user control panel with buttons as described in Yifrach.

Second, Patent Owner asserts the cited art does not teach the recited control circuit. PO Resp. 23–29. Patent Owner argues that Goldwasser’s address controller is not described as being configured to perform the actions recited in the claims. *Id.* at 25. Claim 1 recites a control unit responsively coupled to a keyboard and a memory unit in which

said control circuit being configured so that substantially simultaneous recording and playback of program information is achieved when

said record key is first actuated to begin a recording by initiating storage of the broadcast program information in said memory unit, and

said playback key is subsequently and solely actuated to begin time delay playback of the recording from the beginning thereof by initiating retrieval of the stored program information in said memory unit,

with the interval of the time delay being the same as the time elapsed between the actuation of said record key and the subsequent actuation of said playback key.

Ex. 1001, 8:52–64. Thus, the claims require that the control circuit be configured (1) to achieve substantially simultaneous recording and playback when the record key is actuated to begin a recording; (2) to begin playback when the playback key is subsequently and solely actuated; and (3) such that the interval of the time delay is the same as the time that has elapsed between actuating the record and playback keys.

Patent Owner argues that “[b]ecause Goldwasser lacks a record and a playback key, it cannot disclose the control circuit of the ’444 Patent.” PO Resp. 24. In an obviousness analysis, however, a single reference’s lack of disclosure as to an aspect of the claims is not fatal to an asserted ground of unpatentability. As discussed above, we look to the teachings of the cited references to see what one of ordinary skill in the art would have learned from the combination of teachings put forth by the Petitioner. Here, we have found that the record and playback keys would have been obvious in light of the teachings of Goldwasser and Yifrach. The analysis as to whether Goldwasser and Yifrach would have taught the recited control circuit flows from our previous discussion of the record and playback keys. Thus, we look to see whether Goldwasser teaches the

recited configuration for the control circuit, and we do this in light of our finding that the combination of Goldwasser and Yifrach would have taught the recited keys.

Goldwasser discloses

[a] video recorder and playback device allowing simultaneous recording and playback of program material, including means for controllably varying a time delay between the recording and playback of recorded material. This allows, for example, playback of previously recorded material to be temporarily stopped and then resumed without interrupting the recording of new material.

Ex. 1005, Abstract. According to Petitioner, Goldwasser describes address controller 58, which controls the location where video signals are stored or accessed and is responsive to commands received from user control panel 50. *See* Pet. 47 (citing Ex. 1005, Figs. 3, 4; Ex. 1010 ¶ 139). Petitioner argues that this disclosure teaches or at least suggests the claimed control circuit. *Id.* We find that Goldwasser's address controller, when viewed in light of Yifrach's two-button interface and Goldwasser's user control panel, would have taught one of ordinary skill in the art a control circuit configured to allow for simultaneous recording when the record key is actuated to begin a recording and playback when the playback key is subsequently and solely actuated to begin playback. We also find that these disclosures would have taught a control circuit configured such that the interval of the time delay is the same as the time that has elapsed between actuating the record and

playback keys. Thus, we find that the cited art would have taught the claimed control circuit.

Finally, Patent Owner contends that one of ordinary skill in the art would not have been motivated to combine the teachings of Goldwasser and Yifrach. PO Resp. 29–38. Patent Owner argues that Petitioner has not provided sufficient evidence to support its assertion that one of ordinary skill would have combined these references. *Id.* at 29. Mr. Goldberg testifies on behalf of Patent Owner that combining Yifrach’s freeze and playback buttons with Goldwasser’s control panel would not result in the claimed invention. *Id.* at 32 (citing Ex. 2001 ¶¶ 37, 55, 56). In addition, Patent Owner contends that Goldwasser and Yifrach are directed to different problems in different fields of inquiry and, thus, a person of ordinary skill would not have combined them. *Id.* at 34–35.

Petitioner responds by stating that Patent Owner has mischaracterized Petitioner’s argument. Reply 7. Petitioner is not arguing that Goldwasser should be modified to include the freeze and playback functionality of Yifrach; instead, Petitioner’s ground is directed to implementing Goldwasser’s user control panel with a two-button user interface as described in Yifrach. *Id.* at 7–8. As discussed above, we find that one of ordinary skill in the art would have been motivated to implement Goldwasser’s user control panel with buttons and that such a modification would have been within the knowledge of one of ordinary skill in the art.

As to the problems addressed by the Goldwasser and Yifrach, Patent Owner asserts that “‘problems’ articulated in the references demonstrate that they are

not ‘the same,’ or even similar in a meaningful way.” PO Resp. 34. We disagree with Patent Owner’s assertion. Yifrach’s device is designed to remedy the problem of a listener missing a portion of a previously broadcast program by allowing the listener to playback a portion that may have been missed due to the listener’s inattentiveness. *Id.* at 34–35 (citing Ex. 1003, 1:9–20, 1:24–28). Goldwasser allows a user to cease watching a program in order to handle an interruption such as a phone call and then resume viewing the program after the completion of the interruption. *Id.* (citing Ex. 1005, 1:13–18, 1:26–32, 1:43–49). We find that Petitioner’s description of the field of common inquiry (“delayed playback of audio or visual information”) is reasonable in light of the evidence. *See* Pet. 56; Ex. 1010 ¶ 154. Like the ’444 patent, both cited references are directed to providing individuals with the ability to enjoy a broadcast program despite interruptions that may cause the user to step away from, or provide less than his or her full attention to, the broadcast. The references describe different reasons for the user’s distraction, but the common thread is that the user is not paying full attention to the broadcast and the user seeks a way to record and playback content that the user would have missed due to that distraction. Thus, we find that the cited references are analogous art because they are from the same field of endeavor, and that they are pertinent to the particular problem addressed in the ’444 patent. Based on the full record, we find that Petitioner has provided sufficient evidence of a motivation to combine Goldwasser and Yifrach. Accordingly, we are persuaded that Petitioner has demonstrated by a preponderance of the evidence the unpatentability of independent claims 1 and 14 over Goldwasser and Yifrach.

Claims 7–10 depend from claim 1. We have reviewed Petitioner’s arguments and supporting evidence with respect to these claims (Pet. 51–54), and we determine that Petitioner has demonstrated by a preponderance of the evidence that the combination of Goldwasser and Yifrach also teaches or suggests the limitations of those claims, as set forth in the Petition. For example, claim 7 depends from claim 1 and further recites that the storage medium comprises solid state random access memory. Ex. 1001, 9:11–13. Petitioner asserts that Goldwasser stores the recorded video in random access memory 53 and notes that it may be desirable to use a solid state FIFO buffer. Pet. 51 (citing Ex. 1005, 6:25–29, 7:59–66). We agree with this assertion and the other factual assertions related to these dependent claims. Patent Owner did not direct any additional arguments to these dependent claims.

Accordingly, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 7–10, and 14 would have been obvious, under 35 U.S.C. § 103(a), over the combination of Goldwasser and Yifrach.

C. Obviousness of Claims 2–4 and 13 over Goldwasser, Yifrach, and Vogel

Petitioner asserts that claims 2–4 and 13 would have been obvious over Goldwasser, Yifrach, and Vogel. Pet. 57–58. Claims 2–4 and 13 each depend directly or indirectly from claim 1. Patent Owner did not direct any additional arguments to these dependent claims. Claims 2–4 further recite a remote control unit for use with the recording device. Petitioner asserts that Vogel taken in combination with Goldwasser and Yifrach would have rendered obvious the claimed remote

control. Pet. 36–37, 57 (citing Ex. 1004, 7, Fig. 1). Vogel discloses a system and method for selecting television programs. Ex. 1004, Abstract. Specifically, Vogel describes “a device which communicates with the VCR via an infra-red (IR) control signal.” *Id.* at 6:24–25. This remote control allows the user to control the functions of the VCR. *Id.* Petitioner contends that Vogel’s remote control in conjunction with the above-discussed disclosures from Goldwasser and Yifrach would have rendered obvious claims 2–4. We are persuaded by Petitioner’s contentions and find that Petitioner has demonstrated by a preponderance of the evidence the unpatentability of claims 2–4.

Claim 13 also depends from claim 1. It further recites a timer circuit adapted to enable the preprogrammed unattended initiation of recording. As noted by Petitioner, Vogel states that “[m]any VCRs are equipped with timing means for starting and stopping recording of programs at times selected by the user.” Pet. 37 (quoting Ex. 1004, 3). We find that Petitioner has demonstrated by a preponderance of the evidence the unpatentability of claim 13, as set forth in the Petition.

Accordingly, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 2–4 and 13 would have been obvious, under 35 U.S.C. § 103(a), over the combination of Goldwasser, Yifrach and Vogel.

III.CONCLUSION

Based on the arguments in the Petition, as well as the evidence of record, we determine that Petitioner has demonstrated by a preponderance of the evidence

that claims 1, 7–10, and 14 would have been obvious, under 35 U.S.C. § 103(a), over the combination of Goldwasser and Yifrach. We further determine that claims 2–4 and 13 would have been obvious under 35 U.S.C. § 103 (a) over the combined teachings of Goldwasser, Yifrach, and Vogel.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–4, 7–10, 13, and 14 of the '444 patent are held unpatentable;

FURTHER ORDERED that, because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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