

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Lectrosonics, Inc.
Petitioner

v.

Zaxcom, Inc.
Patent Owner

IPR2018-00972
U.S. Patent 9,336,307

PETITION FOR *INTER PARTES* REVIEW

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LIST OF EXHIBITS

Exhibit	Description
EX1001	U.S. Patent 9,336,307 (“the ’307 patent”)
EX1002	File History of U.S. Patent Appl. 13/774,744
EX1003	U.S. Patent 6,825,875 (“Strub”)
EX1004	U.S. Patent Appl. Pub. 2002/0159179 (“Nagai”)
EX1005	U.S. Patent Appl. Pub. 2004/0028241 (“Gleissner”)
EX1006	U.S. Patent 5,471,658 (“Iacono”)
EX1007	<i>Dropout Replacement with Backup Recording at Tape’s Margin</i> , IEEE, 1993
EX1008	International Pub. WO 2004/091219 (“Wood”)
EX1009	U.S. Patent Appl. Pub. 2006/00270465 (“Lee”)
EX1010	U.S. Patent 6,075,500 (“Kurz”)
EX1011	Declaration of John Tinsman
EX1012	Curriculum Vitae of John Tinsman
EX1013	Lee Provisional Application 60/685,974
EX1014	First Amended Complaint, <i>Zaxcom, Inc. v. Lectrosonics, Inc.</i> , 1:17-cv-3408 (E.D.N.Y.) (Nov. 16, 2017) (without Exhibits).
EX1015	Exhibit F to First Amended Complaint, <i>Zaxcom, Inc. v. Lectrosonics, Inc.</i> , 1:17-cv-3408 (E.D.N.Y.) (Nov. 16, 2017).
EX1016	U.S. Patent Appl. Pub. 2005/0271355 (“Gilor”)
EX1017	U.S. Patent Appl. Pub. 2006/0083388 (“Rothschild”)
EX1018	U.S. Patent Appl. Pub. 2004/00220487 (“Vyshedskiy”)
EX1019	LS-40MM - GPS Receiver Module

I. INTRODUCTION

Lectrosonics, Inc. (“Petitioner”) requests institution of an *inter partes* review (“IPR”) on claims 1-14 of U.S. Patent 9,336,307, purportedly owned by Zaxcom, Inc. During prosecution, the Examiner rejected claims based on a prior-art wireless microphone, but later allowed the claims because that art did not disclose:

- (i) “[a]n apparatus or system for locally recording locally generated audio”;
- (ii) “at least one control unit ... for creating local audio data and storing said local audio data in said memory”; or
- (iii) “wherein said local audio data may be retrieved after said locally recording and combined with said remotely recorded audio data.”

EX1002 at 34, 51. But those elements were well known. Making local copies of an audio recording was not new. Indeed, the ’307 patent admits that systems had been created to record performance audio, including a multi-track audio recorder wired to one or more microphones. EX1001, 1:39-44. While the patent acknowledges that the dropout problem was also known, as were many solutions to that problem, it failed to disclose that using a backup or clean copy of an audio feed to repair a dropout was also known for at least a decade. Because the only purported point of novelty was old, there is more than a reasonable likelihood that all claims of the ’307 patent are unpatentable.

II. STATEMENT OF PRECISE RELIEF REQUESTED

A. Claims for Which Review Is Requested

Petitioner requests IPR and cancellation of claims 1-14 of the '307 patent under 35 U.S.C. § 311.

B. Statutory Grounds of Challenge

This Petition presents the following grounds:

Ground	Basis	Claims
1	U.S. Patent 6,825,875 (“Strub,” EX1003) in combination with U.S. Patent Appl. Pub. 2002/0159179 (“Nagai,” EX1004) renders obvious	1-11
2	Strub in combination with Nagai and International Pub. WO 2004/091219 (“Wood,” EX1008) renders obvious	1-11
3	Strub in combination with U.S. Patent Appl. Pub. 2004/0028241 (“Gleissner, EX1005”) renders obvious	1-11
4	Strub in combination with Gleissner and Wood renders obvious	1-11
5	Strub anticipates	12-14
6	Strub in combination with Wood renders obvious	12-14
7	U.S. Patent Appl. Pub. 2006/0270465 (“Lee,” EX1009) anticipates	1-7, 10-14
8	Lee in combination with Nagai renders obvious	1-14

III. THE '307 PATENT

On its face, the '307 patent issued from U.S. Patent Appl. 13/774,744, filed February 22, 2013, which is a continuation of U.S. Patent Appl. 12/772,471, filed May 3, 2010, which is a continuation of U.S. Patent Appl. 11/404,735, filed April

14, 2006, which is a continuation-in-part of U.S. Patent Appl. 11/181,062, filed July 14, 2005.

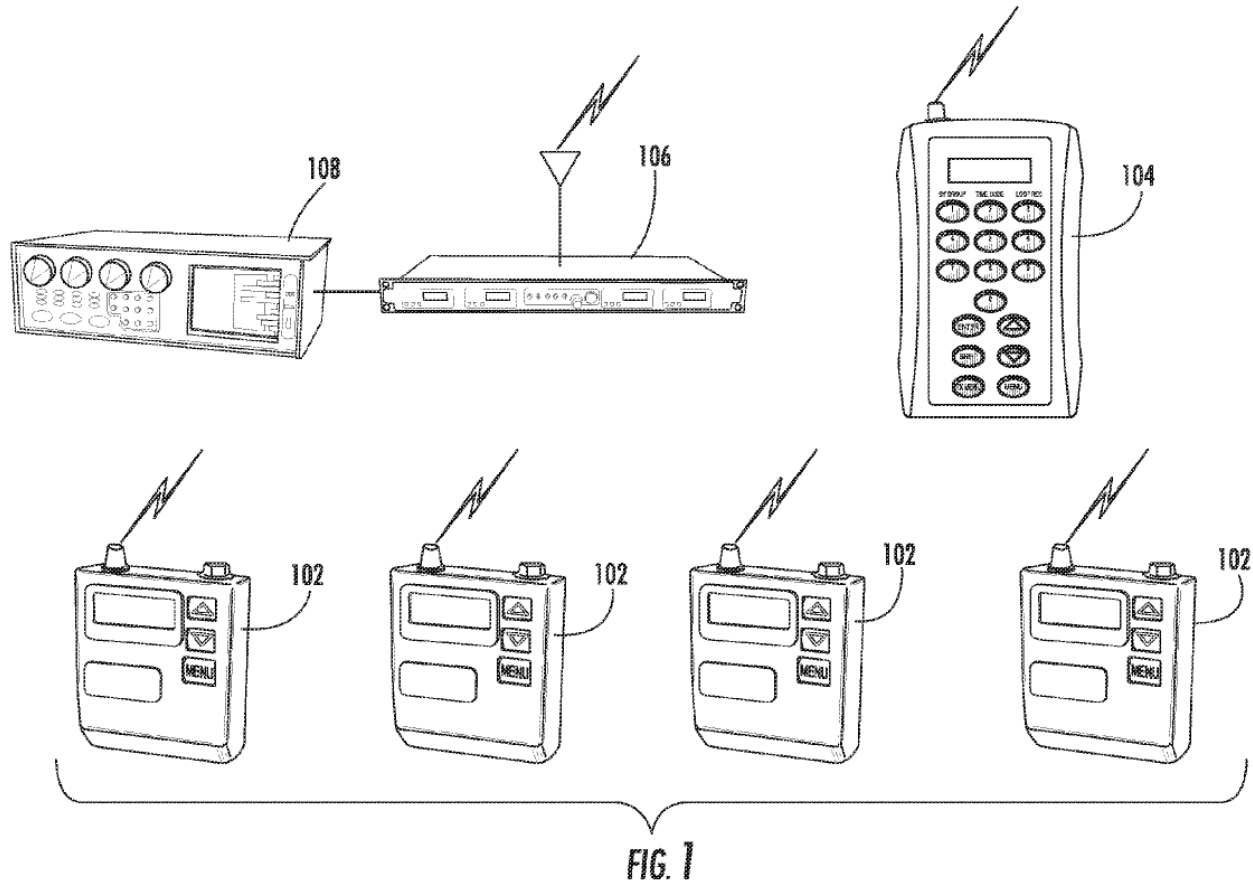
A. State of the Art According to the '307 Patent

The '307 patent relates to the recording and processing of audio received from one or more wireless devices. EX1001, 1:31-34. Before the patent, prior-art multitrack recorders could receive audio from multiple sources, each recorded as a different track. *Id.*, 1:39-64. The recorded audio could include non-audio information, such as a time reference (e.g., a Society of Motion Picture and Television Engineers (“SMPTE”) timecode signal) that could be used for synchronization. *Id.* Each track could use a wireless receiver that receives audio wirelessly from body packs worn by a performer, with the outputs synchronized to create the multitrack recording. *Id.*

One known problem with using wireless audio transmission was errors that cause the audio to “dropout.” *Id.*, 1:65-67. One known solution was using multiple receiver circuits to reduce dropouts. *Id.*, 2:1-12. The '307 patent proposes to solve dropouts by making a local recording of the transmitted audio, including timestamps, and later combining the locally recorded audio with a previously transmitted version—synchronizing the two using the timestamps—to replace any dropouts. *Id.*, 4:51-66.

B. Disclosure and Claims of the '307 Patent

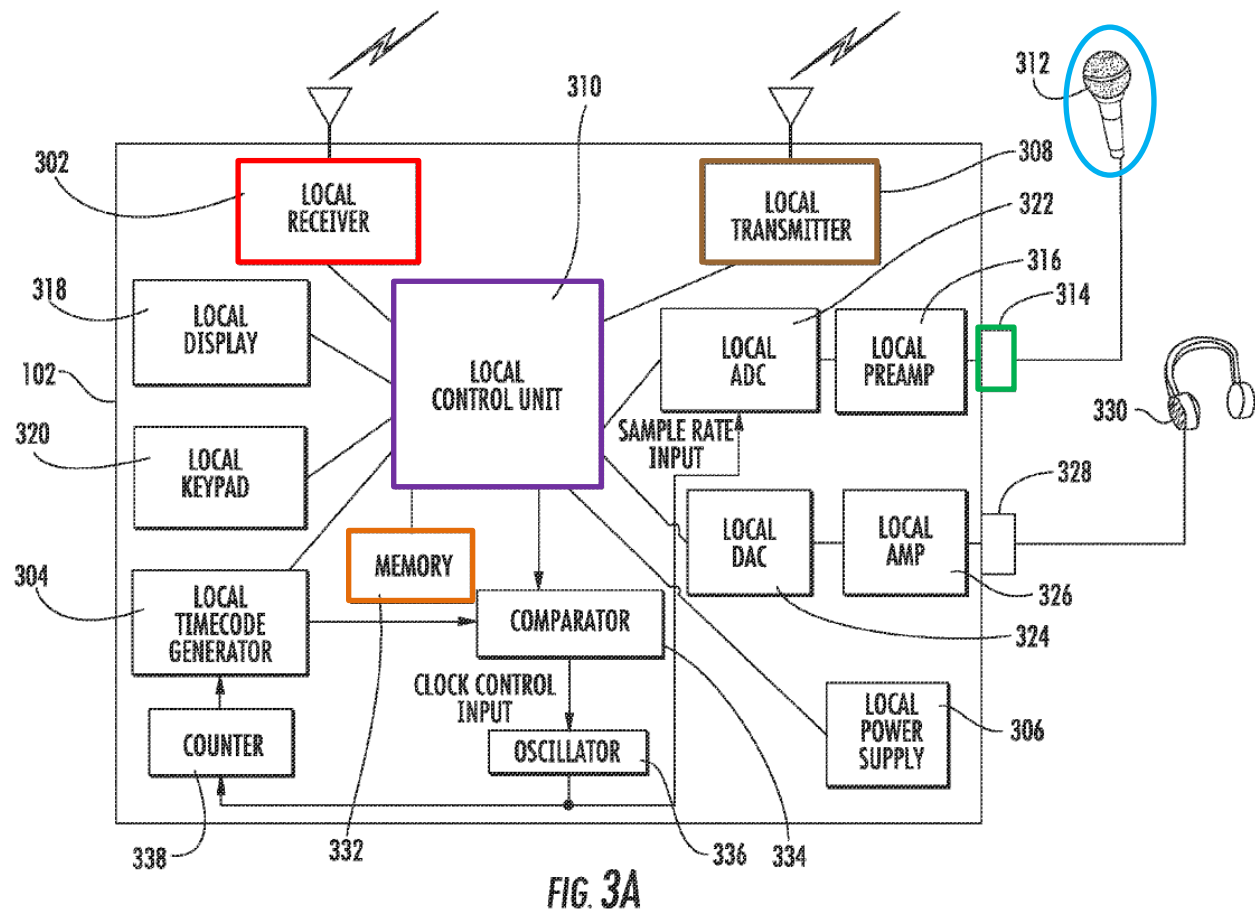
Figure 1 of the '307 patent illustrates the components of a recording system in accordance with the purported invention, including local audio devices 102, remote control unit 104, receiver 106, and recorder 108. *Id.*, 3:26-29, 3:66-4:50.



EX1001, Fig. 1; EX1011, ¶ 19. Local audio device 102 receives local audio generated by a performer during an audio event and records the audio as local audio data in memory. *Id.* Local audio device 102 also transmits the local audio to recorder 108—i.e., “virtually any commercially available recorder”—during the event, and recorder 108 records the transmitted audio as remotely recorded audio

data. *Id.* If a transmission error causes the recorder to miss audio during the event, the local audio data may be retrieved from the local audio device and combined with the remotely recorded audio data to correct for the missed audio. *Id.*

Figure 3A depicts the components of local audio device 102, including **local receiver 302**, **local transmitter 308**, **audio input device 312**, **audio input port 314**, **memory 332**, and **control unit 310**. *Id.*, 8:50-11:55.



EX1001, Fig. 3A (annotated); EX1011, ¶ 20. Local audio is received via [audio input device 312](#)—i.e., “any type of commercially available audio input device such as a microphone”—and [audio input port 314](#)—i.e., “any commercially

available audio input device port that is compatible with local audio input device 312.” *Id.*, 8:65-9:36. The local audio device may also include audio output device port 328—i.e., “any commercially available audio output device port that is compatible with local audio output device 330”—to transmit audio to local audio output device 330—i.e., “any type of commercially available audio output device such as headphones, speakers and the like.” *Id.*, 9:37-60.

The received local audio may be processed by **control unit 310**—i.e., “a digital signal processor” or “[a]ny combination of hardware and software”—and transmitted via **transmitter 308** to other components of recording system 100. *Id.* The received audio may also be stored in **memory 332**—i.e., “virtually any type of commercially available removable or non-removable memory.” *Id.*, 9:61-10:40. **Local receiver 302**—i.e., “virtually any receiver compatible with the other components of local audio device 102”—allows the local audio device to receive “information (e.g., time reference signals, digital commands, audio, etc.) from other components of recording system 100.” *Id.*, 9:37-60, 10:41-57.

Little of the disclosed recording system is actually claimed. EX1001, ¶ 22. The claims do not recite synchronizing the timestamps between the local and remote versions of the audio recording, i.e., the purported point of novelty according to the ’307 patent. *Id.*, 1:30-3:14, 4:51-5:8. And several claim elements are not even limiting. Claim scope is not limited by language that suggests or

makes optional but does not require steps to be performed, or by language that does not structurally limit the claimed apparatus. This includes, for example, language that only recites an intended use. *Minton v. Nat'l Ass'n of Sec. Dealers, Inc.*, 336 F.3d 1373, 1381 (Fed. Cir. 2003).

Representative claim 1 recites:

1. An apparatus or system for locally recording locally generated audio, said locally generated audio also being wirelessly transmitted to, and remotely recorded by, a remote recorder as remotely recorded audio data comprising:

at least one local audio device wearable by a creator of said locally generated audio including:

at least one **local audio device receiver** for receiving at least one of the group consisting of digital data, time data, and audio data;

at least one **audio input port** for receiving said locally generated audio from an **audio input device**, said **audio input device** wearable by a creator of said locally generated audio;

at least one **memory**; and

at least one **control unit** electrically coupled to said **local audio device receiver**, said **audio input device**, and said

memory for creating local audio data and storing said local audio data in said memory;

wherein said local audio data may be retrieved after said locally recording and combined with said remotely recorded audio data.

Claims 2-5 and 11 depend on claim 1, and claim 6 depends on claim 5. Claim 12 generally recites a method directed to (1) locally receiving and storing the local audio in memory, (2) transmitting and remotely recording the local audio via a recorder, and (3) wherein the locally stored audio is retrieved and combined with the remotely recorded audio. Claims 13 and 14 depend on claim 12.

C. The Level of Ordinary Skill in the Art

A person of ordinary skill in the art (“POSITA”) for the ’307 patent would have a Bachelor’s degree in electrical engineering or a related subject and two to five years working with audio and wireless communications systems. EX1011, ¶ 24. Less work experience may be compensated by a higher level of education, and vice versa. *Id.*

IV. CLAIM CONSTRUCTION

The broadest reasonable construction should be applied to all claim terms. For the purposes of this Petition, no explicit construction is needed. As noted above and explained below, however, several claim elements are not limiting.

V. PROPOSED GROUNDS

Claims 1-14 of the '307 patent are unpatentable based on Strub, Nagai, Gleissner, Wood, Kurz, and/or Lee. None of these references were cited in prosecution. See EX1001 at 1, 2.

Reference	Pub. Date	102(e) Filing Date	Statutory Basis
Strub, EX1003	Nov. 30, 2004	Apr. 21, 2000	102(a), (e)
Nagai, EX1004	Oct. 31, 2002	Mar. 14, 2002	102(a), (b), (e)
Gleissner, EX1005	Feb. 12, 2004	Jul. 25, 2003	102(a), (b), (e)
Wood, EX1008	Oct. 21, 2004		102(a)
Kurz, EX1010	June 13, 2000	June 1, 1998	102(a), (b), (e)
Lee, EX1009		May 31, 2005	102(e)

A. Grounds 1-4: Claims 1-11 Are Rendered Obvious over Strub in View of Nagai, Gleissner, and/or Woods

Strub discloses most elements of claims 1-11. Strub may be combined with Nagai (Grounds 1 and 2), which discloses the “*audio input port*” in claim 1, the “*audio output port*” in claims 5 and 6, and the “*memory card*” in claim 9. Strub may alternatively be combined with Gleissner (Grounds 3 and 4), which discloses different types of those same elements further disclosed by Nagai. The combinations of Strub and Nagai or Strub and Gleissner may be further combined with Wood (Grounds 2 and 4), which discloses a different embodiment than Strub

for the element “*wherein said local audio data may be retrieved after said locally recording and combined with said remotely recorded audio data*” in claim 1, to the extent that element is even limiting. Wood’s embodiment is the embodiment of the ’307 patent. Accordingly, these grounds are not redundant.

1. Summary of Prior Art

a. Strub

Like the ’307 patent, Strub discloses a recording system with a wearable, local audio device that locally receives audio from an attached microphone, stores the audio in memory, and transmits the audio to other recording units that record the data. EX1003, 12:13-21, 31-39, 25:35-49, 35:54-65, 37:18-40, 38:1-4; EX1011, ¶¶ 37-40. Strub further discloses that the local audio data may be combined with remotely recorded data. EX1003, 37:18-40. Figure 1, below, shows recording units 105, 106, 107, 108 (i.e., local audio devices), which are worn by participants (or “recorders”) 101, 102, 103, 104 to record live, local audio. *Id.*, 4:21-31 (“wearable recording units”), 7:39-40, 8:7-9:33 (“recording unit according to the invention is also adapted to obtain audio data”), 93:26-27, 94:20-27.

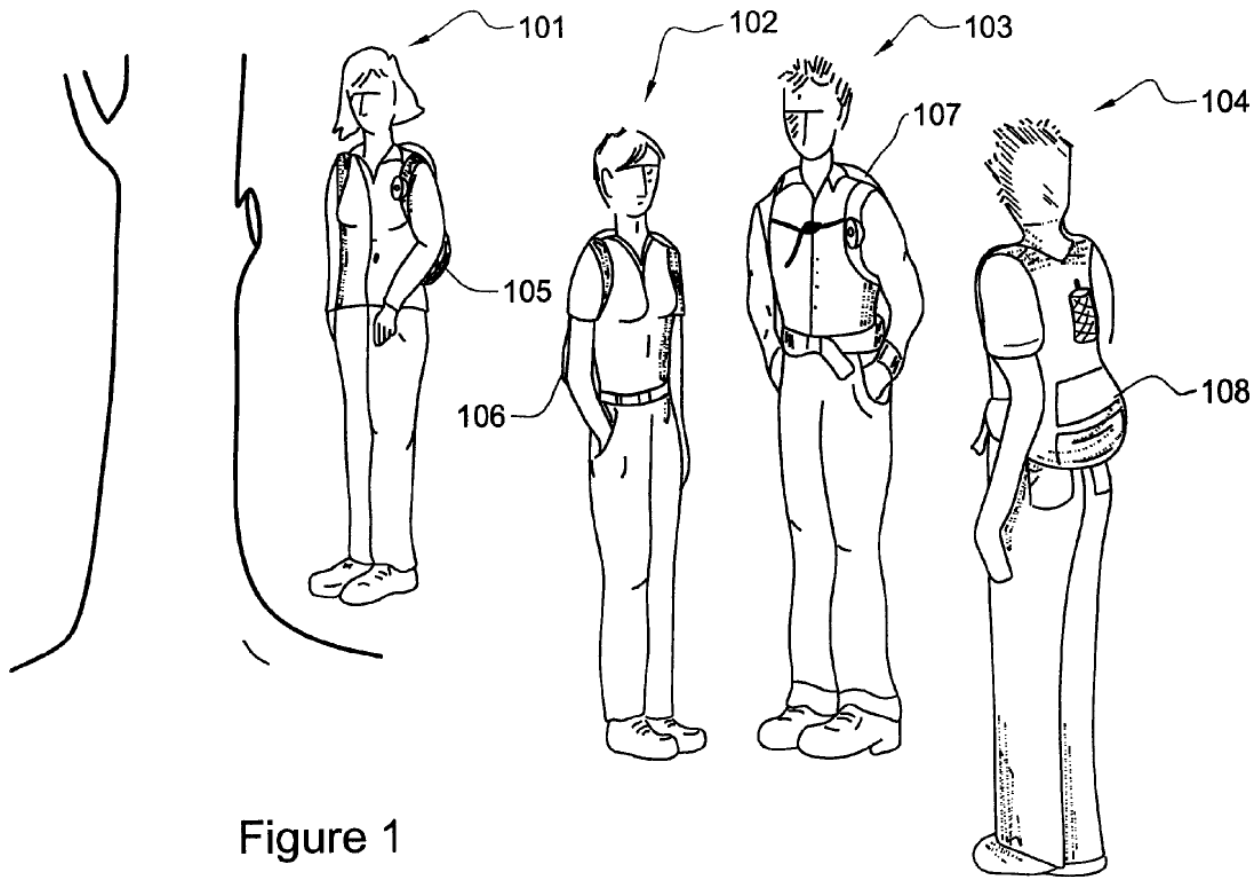
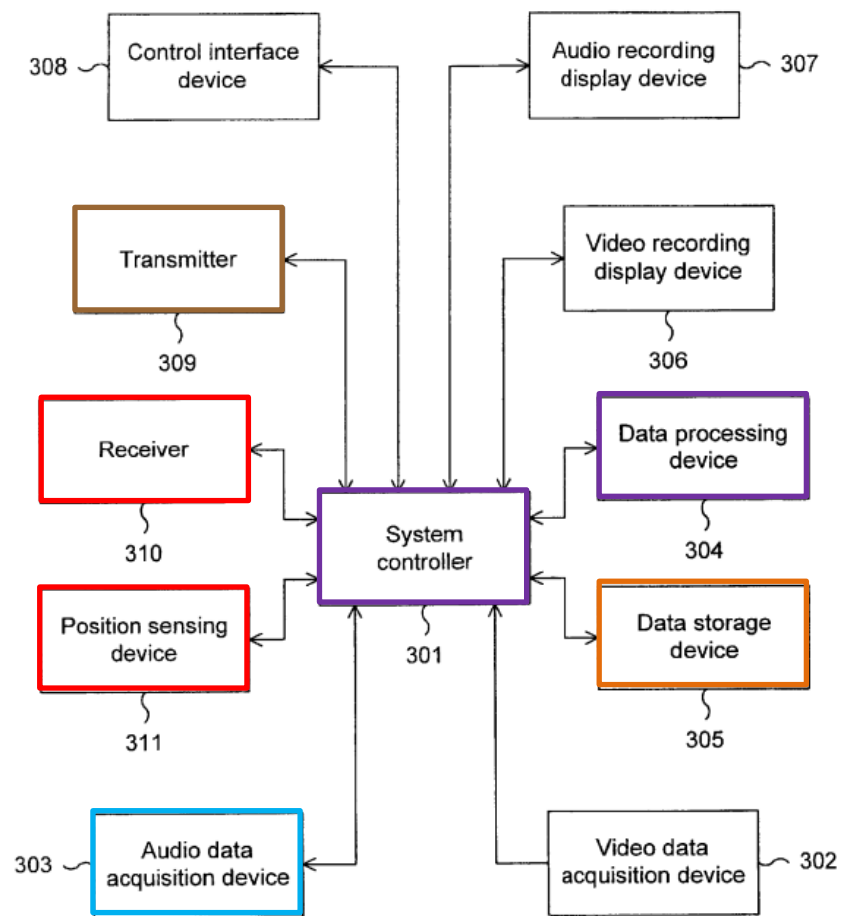


Figure 1

EX1003, Fig. 1. The recording unit can be integrated into a backpack (*Id.*, Fig. 1), attached to a waist strap (*Id.*, 70:52-73:17, Figs. 8A-8C), or a sling (*id.*, 73:18-18, Figs. 9A, 9B). And it may be used to record athletic activities, *id.*, 67:59-61, voices or musical instruments, *id.*, 25: 45-46, and may be from the first-person point of view, *id.*, 8:20-29.

Figure 3 of Strub illustrates the components of a recording unit:



EX1003, Fig. 3 (annotated). The components include receiver 310, position sensing device 311, transmitter 309, audio data acquisition device 303, data storage device 305, system controller 301, and data processing device 304. *Id.*, 11:32-12:57, 13:36-14:13 (“System Controller”); 21:65-25:49 (“Audio Data Acquisition”), 25:50-27:35 (“Other Data Acquisition”), 27:36-35:50 (“Data Processing and Storage”), 35:51-41:52 (“Communication Between Recording Units”), 62:26-64:49 (“Position Sensing Device”), 79:43-85:15 (“Post-Event Use

of Event Recording”; “synchronize the recording data”), 92:5-93:11 (“Audio Recording Display”; “integrate audio recordings”).

Local audio is received via **audio data acquisition device 303**, which can be a microphone, such a lavalier. *Id.*, 12:13-16, 25:35-49. The received audio is processed by **system controller 301** and **data processing device 304** (*Id.*, 12:10-21, 13:26-14:13, 27:36-33:19), and transmitted via **transmitter 309** to other components of the recording system (*id.*, 35:51-36:29). The received audio may also be stored in **data storage device 305**, such as a hard disk or removable flash memory. EX1003, 27:36-51, 33:20-35:50. **System controller 301** can include a clock that is used to timestamp the recording data. *Id.*, 13:48-67. Like the ’307 patent, Strub discloses synchronizing multiple recordings using these timestamps. EX1003, 79:54-80:9, 84:5-25.

The recording units include multiple local receivers, e.g., **receiver 310** and **position sensing device 311** in the form of a GPS receiver. EX1003, 12:39-52, 63:12-15, Fig. 3. **Receiver 310** receives recording data (*id.*, 12:39-52), GPS position data and/or biometric data (*id.*, 36:52-57). The **GPS receiver** can receive not only position information, but also a signal representing the current time that can be used to generate timestamps. *Id.*

b. Nagai

Like Strub, Nagai discloses a portable audio recording device. EX1004, ¶ 70; EX1011, ¶ 41. Nagai's apparatus includes a **mike jack (2 or 64)** for audio input, a headphone jack (62) for audio output, a **memory card (117)** to store audio data, and a USB port (24) for transferring audio data to another device. EX1004, ¶¶ 106, 125, 126, 139, 140, 145, Figs. 1, 2A, 2B.

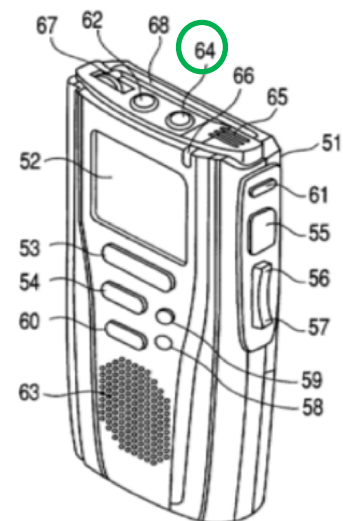
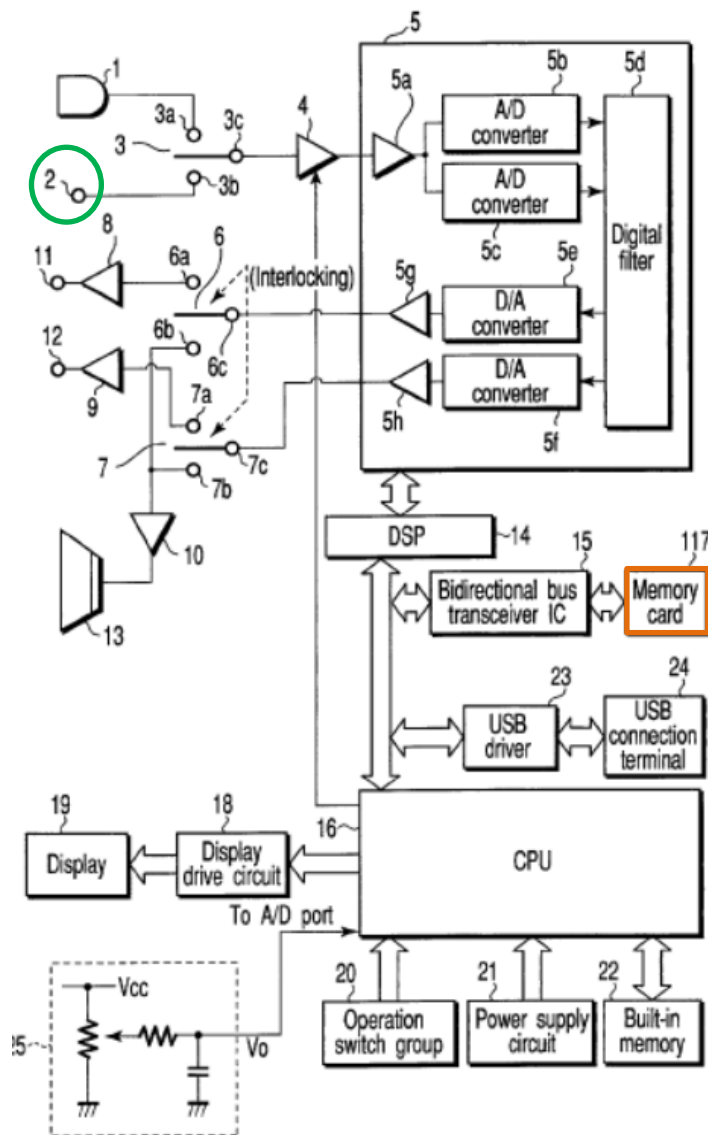


FIG. 2A

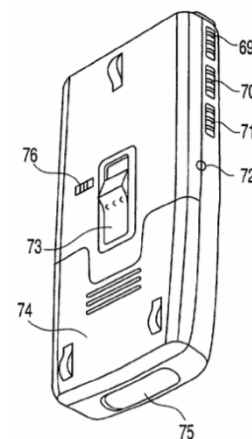


FIG. 2B

EX1004, Figs. 1 (annotated), 2A (annotated), 2B.

c. Gleissner

Like Strub, Gleissner discloses a portable audio data recorder. EX1005, Abstract; EX1011, ¶ 42. Gleissner teaches another conventional **audio input port** used to connect a **microphone** to the portable recorder—an **XLR plug connector**. EX1005, ¶¶ 24, 32. “This has the advantage that the recording unit can be coupled together with practically any desired microphones, because an XLR connector is generally formed as the preferred embodiment in the case of microphones.” *Id.*, ¶ 13. Gleissner discloses that a recording unit may also have a headphone socket so that the person using the microphone simultaneously hears what is spoken into the microphone. *Id.*, ¶ 33. Figure 1 shows Gleissner’s device:

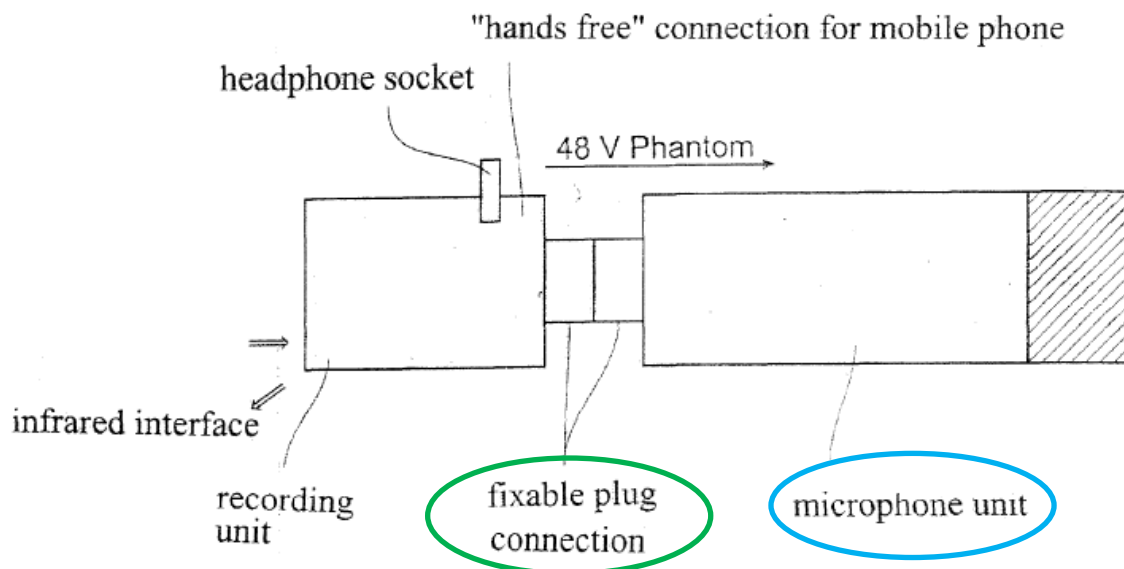


Fig. 1

EX1005, Fig. 1 (annotated).

d. Wood

Like Strub, Wood discloses processing video and audio content sent over a broadcast communication channel, and Wood recognizes the problem of dropouts, where a transmission is disrupted, e.g., by rain or birds. EX1008, 1:19-26; EX1011, ¶ 43. Wood discloses sending a request when a dropout is detected so that, like in the '307 patent, the content can be resent and combined with the previously received audio to repair the dropout. EX1008, 1:31-2:13. According to Wood, this improves signal quality (*id.*, 1:28-30) and produces a “program free of dropouts” (*id.*, 3:4-6).

2. Claim 1

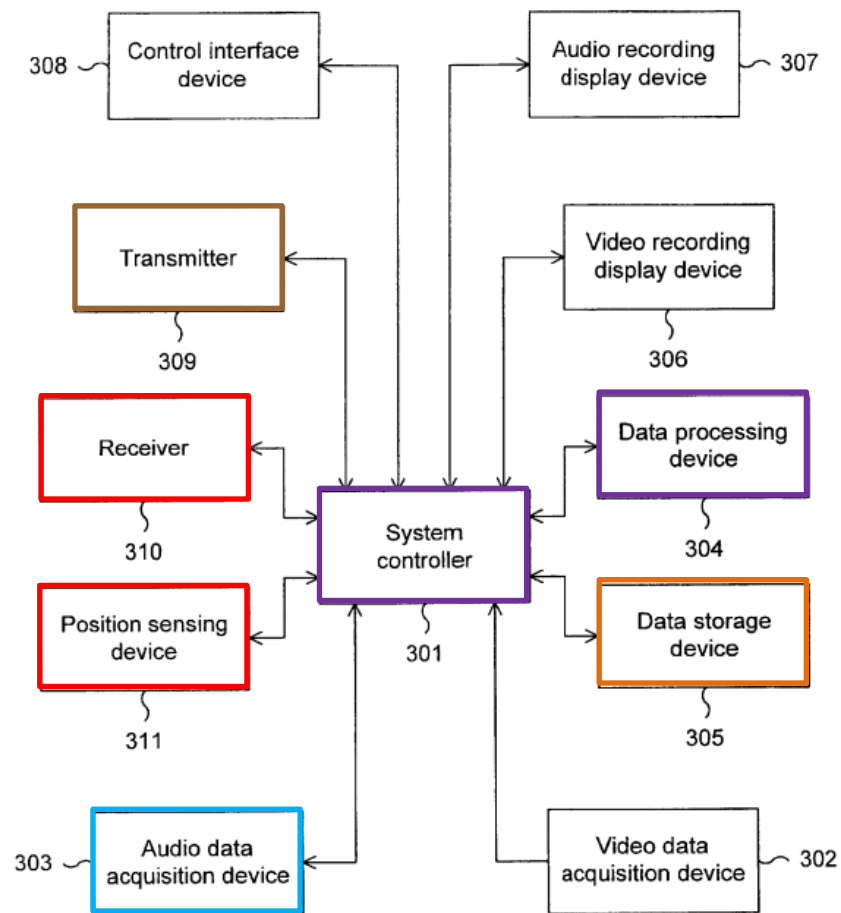
- a. [1.0] “An apparatus or system for locally recording locally generated audio, said locally generated audio also being wirelessly transmitted to, and remotely recorded by, a remote recorder as remotely recorded audio data”**

To the extent the preamble is limiting,¹ Strub discloses it. EX1011, ¶¶ 44-45. Strub discloses a recording unit (“*apparatus or system*”) that acquires audio data from an attached microphone (“*locally generated audio*”) and both stores it in a data storage device (“*locally recording*”) and wirelessly transmits it to another

¹ In litigation, Zaxcom argues the preamble is not limiting. EX1014, ¶ 86; EX1015 at 2 (“The preamble of claim 1 is not limiting.”).

recording unit (“*remote recorder*”) that records the audio data. EX1003, 12:13-21, 31-39, 25:35-49, 35:54-65, 37:18-40, 38:1-4.

Figure 3 shows a recording unit, which includes **audio data acquisition device 303**, **transmitter 309**, **receiver 310**, **position sensing device 311**, and **data storage device 305**:



EX1003, Fig. 3 (annotated); EX1011, ¶ 45. Audio data acquisition device 303 (e.g., a microphone) acquires local audio, and the recording unit stores the audio data in data storage device 305. EX1003, 12:13-21, 25:35-49. Transmitter 309 wirelessly transmits the locally generated audio to a remote recording unit:

The transmitter 309 transmits signals ... representing recording data acquired by the recording unit 300, so that such recording data can be used by other recording units (e.g., ... to enable processing of recording data obtained by the recording unit 300 for use in affecting the manner in which another recording unit records, processes or stores recording data).

Id., 12:31-39; *see also id.*, 35:54-65. A POSITA would understand this to be wireless transmission because (1) Strub gives the example of a 2.4 gigahertz analog television transmission path; and (2) the figures show no wires between the local and remote recording units:

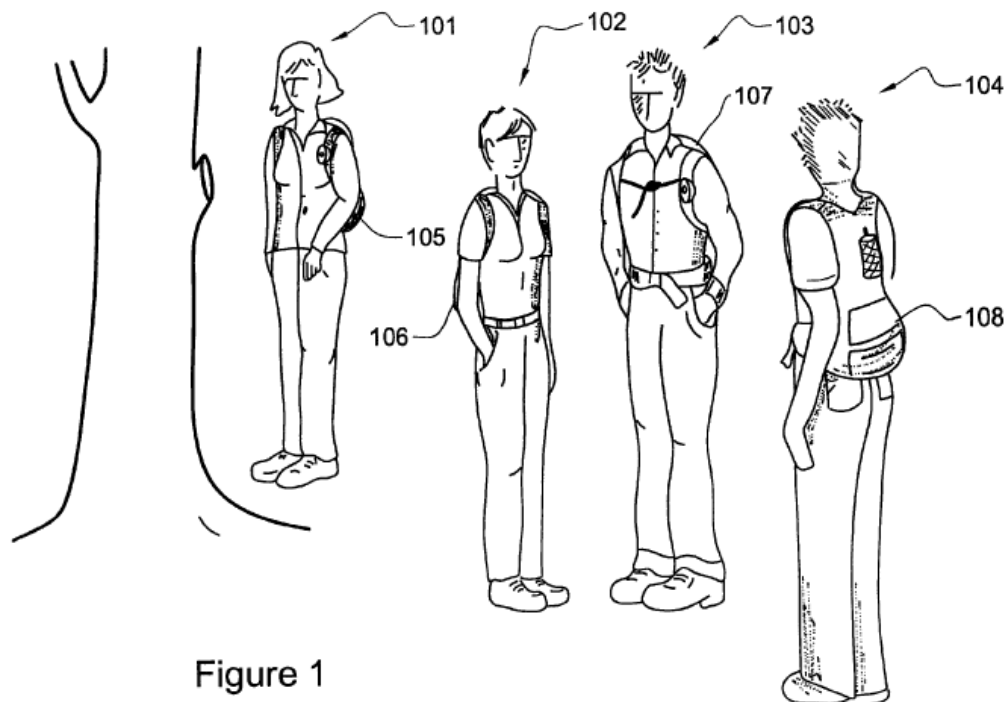


Figure 1

EX1003, Fig. 1, 6:1-8 (“communication between the portable video recorder and auxiliary device can be implemented using wireless and/or wired methods and

apparatus”), 7:25-36 (“wireless methods and apparatus”), 47:41-48, 53:16-33, 64:57-65:22 (“The implementation of wired and wireless communication techniques and apparatus is known to those skilled in the art.”), 70:38-51, 75:58-76:34; EX1011, ¶ 45. Strub discloses that the remote recording unit receives the transmitted audio data and records it. EX1003, 35:54-65 (“each recording unit can include a receiver that enables receipt of signals broadcast from other recording units that represent the recording data”; “enabling a recording unit to ... store, during the event, a recording being obtained”), 37:18-40 (“implemented so that recording data from multiple recording units can be recorded simultaneously”).

b. [1.1] “*at least one local audio device wearable by a creator of said locally generated audio*”

Strub discloses element [1.1] as a recording unit, which may be “a small, lightweight, *wearable* recording unit.” EX1003, 4:29-31 (emphasis added), Abstract, 14:59-15:11 (“for the recorder to wear”), 16:66-17:24 (“wearable apparatus”), 38:65-39:11, 66:33-51 (“make the recording unit more comfortable to wear”), 67:54-68:10 (“emphasis on the wearability”), 72:10-19 (“recorder 850 is wearing the recording unit 800”), Figs. 1, 8A-8C, 9A, 9B; EX1011, ¶ 46. The local audio device may be worn by a performer to make live recordings, including voice or musical instruments. EX1003, 4:21-31, 25:38-46, 93:26-27, 94:20-27; EX1011, ¶ 46.

c. **[1.2] “at least one local audio device receiver for receiving at least one of the group consisting of digital data, time data, and audio data”**

Strub discloses element [1.2] in multiple ways because the recording unit (“*local audio device*”) includes multiple receivers (“*at least one local audio device receiver*”)—e.g., receiver 310 and position sensing device 311 in the form of a GPS receiver. EX1003, 12:39-52, 63:12-15, Fig. 3; EX1011, ¶ 47. Although the claim recites only “*at least one of the group*,” Strub discloses all three types of data. Receiver 310 receives recording data and other related data (“*audio data*”) (*id.*, 12:39-52, 35:53-61), and GPS position or biometric data (“*digital data*”) (*id.*, 36:52-57). Receiver 301 can be a digital receiver, making all received data “*digital data*.” *Id.*, 37:55-62 (“digital transmitters/receivers”). The GPS receiver can “receive a signal representing the current time that can be used as a clock to generate time-stamps for the recording data” (“*time data*”). *Id.*, 63:41-60.

d. **[1.3] “at least one audio input port for receiving said locally generated audio from an audio input device, said audio input device wearable by a creator of said locally generated audio”**

Strub discloses element [1.3]. EX1011, ¶ 48. Strub discloses “*receiving said locally generated audio from an audio input device, said audio input device wearable by a creator of said locally generated audio*” because the recording unit can receive audio from a microphone such as a lavalier (“*audio input device*”)

worn on the recorder (“*creator*”).² EX1003, Fig. 3, 21:65-25:49, 68:63-69:67; *supra* Section V.A.2.b. Strub discloses a connection between the microphone (audio data acquisition device 303) and the recording unit using wired or wireless techniques known to those skilled in the art (EX1003, 64:50-65:3), which would include an “*audio input port*,” such as a standard microphone jack. EX1011, ¶ 48 In litigation, Zaxcom argues that an “input connector” in the form of “the industry standard TA5M jack” that accepts audio from a device, “such as a wearable lavalier microphone” (like in Strub), satisfies this element. EX1015 at 6.

If Zaxcom argues that Strub does not disclose “*an audio input port*,” it would have been obvious to modify Strub’s recording unit to include an audio input port in view of Nagai (Grounds 1 and 2) or Gleissner (Grounds 3 and 4). EX1011, ¶ 49.

A POSITA would have understood that Strub suggests the use of an audio input port because such ports were the conventional technique for wired microphone communication; they provide the benefit of interchangeability by allowing the user to select the appropriate microphone for the recording scenario,

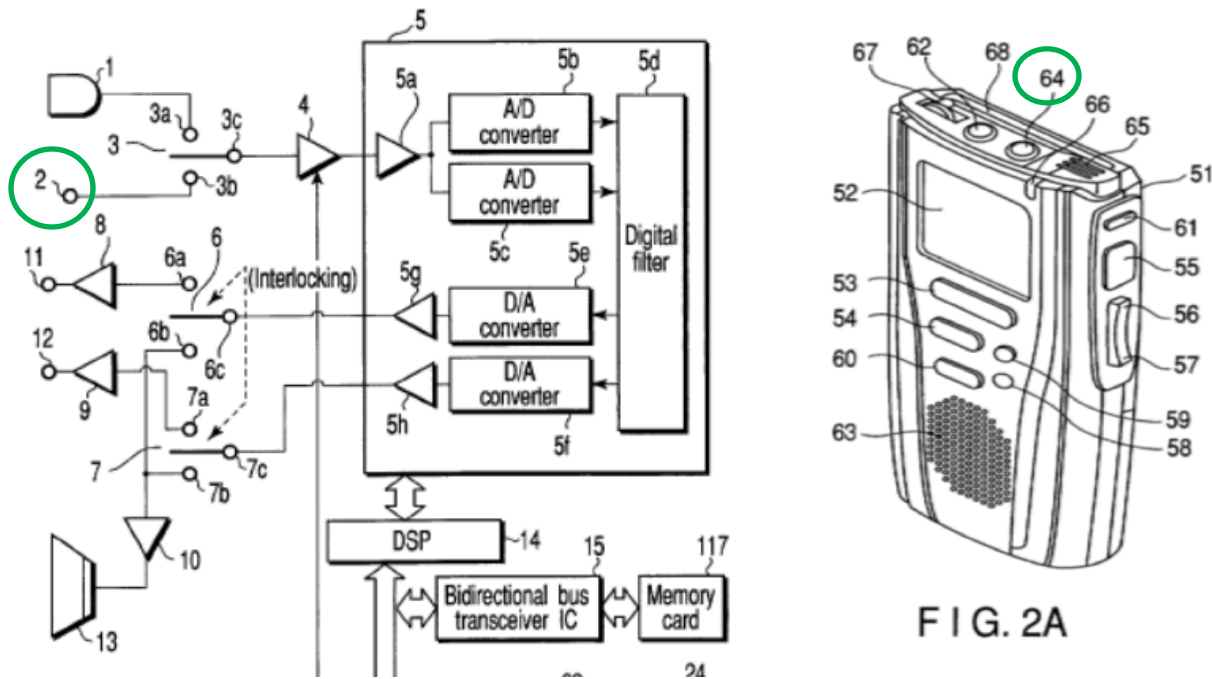
² Strub uses the term “recorder” to refer to the person wearing and controlling the recording unit. EX1003, Abstract (“a recorder (i.e., a person in control of a recording unit according to the invention)”), 4:20-25.

as Strub explains (EX1003, 25:8-49); and they allow the microphone to be detachable. EX1011, ¶ 50. The '307 patent recognizes that using a port to connect a microphone was not new—describing audio input port 314 as “any commercially available audio input device port” and as being connected to “any commercially available audio input device such as a microphone.” EX1001, 9:2-8.

Nagai and Gleissner disclose two different conventional audio input ports for connecting a microphone. EX1011, ¶ 51.³ It would have been obvious to a POSITA to use either of these known and predictable techniques to connect a microphone to Strub’s recording unit to provide the beneficial customization and detachability. *Id.*

Grounds 1 and 2. Nagai discloses using a “mike jack” for connecting a microphone to an analogous portable voice recording device to provide the customization that Strub desired. EX1011, ¶ 52. Figure 1 shows mike jack 2, and Figure 2A shows “mike jack 64” on top the bodypack:

³ It was also known to make bodypack connectors, like an audio input port, water tight. EX1006, 1:13-18, 5:6-9, Figs. 1, 2; EX1003, 67:26-29; EX1011, FN 3.



EX1004, Figs. 1 (annotated), 2A (annotated); EX1011, ¶ 52. Nagai discloses that the mike jack “receives a voice signal from an external device such as an external mike.” EX1004, ¶¶ 109, 139. A POSITA would understand “mike jack” to include a conventional tip-ring-sleeve (“TRS”) microphone connector, which was ubiquitous for connecting microphones to recording devices (particularly in the consumer sector). EX1011, ¶ 52.

Grounds 3 and 4. Gleissner teaches another conventional audio input port—an XLR plug connector—used to connect an external microphone to an analogous portable audio recorder to provide the desired customization and detachability. EX1005, ¶¶ 13 (“[An] XLR plug connection is preferably formed between the recording unit and the microphone unit.”), 23, 24, 32; EX1011, ¶ 53. It would have

been further obvious to use an XLR connector based on the express motivation in Gleissner: “This has the advantage that the recording unit can be coupled together with practically any desired microphones, because an XLR connector is generally formed as the preferred embodiment in the case of microphones.” EX1005, ¶ 13. The XLR connector was a particularly common design choice in the professional audio sector. EX1011, ¶ 53.

e. [1.4] “*at least one memory*”

Strub discloses element [1.4] because its recording unit includes “*memory*,” i.e., data storage device 305, which may include, for example, a hard disk; a removable data storage medium, such as a recordable-once DVD (DVD-R) disk or a recordable/writable DVD (R-W DVD) disk; or a non-volatile data storage device, such as solid state or flash memory. EX1003, 27:36-51, 33:20-35:50, 76:6-34, 94:14-19, Fig. 3; EX1011, ¶ 54.

f. [1.5] “*at least one control unit electrically coupled to said local audio device receiver, said audio input device, and said memory for creating local audio data and storing said local audio data in said memory*”

Strub discloses element [1.5] because it discloses system controller 301 and data processing device 304 (“*at least one control unit*”), which are coupled to receiver 310 and position sensing device 311 (“*local audio device receiver*”), audio data acquisition device 303 (“*audio input device*”), and data storage device 305

(“memory”). EX1003, 12:4-13, 13:36-14:13 (“System Controller”), Fig. 3; EX1011, ¶¶ 55-57. System controller 301 controls the operation of the components of recording unit 300, “for creating local audio data and storing said local audio data in said memory.” EX1003, 12:4-13, 13:36-14:13, 66:7-25, 70:1-5. In the claim, the term “local audio data” includes the audio and may include other associated data, e.g., an identifier of the local audio device or performer as recited in claim 2 of the ’307 patent. *Id.*, 2:16-33, 9:46-48, 11:39-55, 22:8-15, 23:22-46.

System controller 301 acquires local audio via audio data acquisition device 303 and stores the acquired audio data in data storage device 305. *Id.*, 12:16-21. Data processing device 304 can also process (e.g., compress) the acquired audio data before it is stored. *Id.* System controller 301 may also store information associated with the audio recording, e.g., a timestamp or information identifying the recording unit and/or recorder, which becomes part of the “local audio data.” *Id.*, 13:48-67.

Zaxcom argued that the “control unit” may be “in the form of a processor, controller, hardware, software/firmware, and/or other circuitry,” consistent with Strub. EX1015 at 10.

g. [1.6] “wherein said local audio data may be retrieved after said locally recording and combined with said remotely recorded audio data”

While element [1.6] does not appear to limit the claimed apparatus,⁴ Strub discloses it, and Strub in combination with Wood renders it obvious. EX1011, ¶ 58. Although not required by the claim, the ’307 patent discloses that the ability to perform this function is provided by time stamping the audio data. EX1001, 4:1-25, 4:51-5:8. The ’307 patent uses timestamps to combine the local audio data with two types of remotely recorded data: (1) a remote recording captured by other devices (*id.*, 4:1-14 (“allows multiple individually recorded tracks to be combined”)); and (2) a remote recording of the local audio data being repaired (*id.*, 4:15-25 (“mixed post-recording to automatically correct for any audio data lost”)). Strub discloses the first embodiment, using timestamps for post-event synchronization of audio recordings. EX1003, 13:48-58, 63:41-49, 79:54-80:9, 84:5-25. Wood discloses the second embodiment, combining local audio data with previously received audio to repair a dropout. EX1008, 1:31-2:13.

Grounds 1 and 3 (without Wood). Strub discloses element [1.6]. EX1011, ¶ 59. Like the ’307 patent, Strub discloses the recording units timestamping the recorded audio and synchronizing recordings from multiple recording units using those timestamps in post-processing. EX1003, 13:50-67 (using clock in system

⁴ Element [1.6] appears to recite only an intended use of the local audio data.

controller to timestamp), 63:41-60 (using time from GPS receiver to timestamp), 79:54-80:9 (“temporally synchronize multiple recordings of the same event that were simultaneously obtained by different recording units”; “recording unit ... typically includes a clock that is used to time-stamp recording data as the recording data is acquired”); 84:5-25. Strub allows the local audio data to be retrieved by transmitting the data to other devices via transmitter 309 or wired connections, such as USB. *Id.*, 12:4-39, 66:7-25, Fig. 3. Zaxcom argued that element [1.6] is satisfied by a recording unit with the ability to output the local audio data so that it may be retrieved (“e.g., played back”) and synchronized with remotely recorded audio. EX1015 at 12.

Grounds 2 and 4 (with Wood). If Zaxcom argues that Strub does not disclose element [1.6], it would have been obvious in combination with Wood because Wood discloses this element. EX1011, ¶ 60. Strub recognized that there would be instances where recordings were deficient. EX1003, 48:18-30, 85:28-41 (“during an event, the recording obtained by a particular recording unit will be deficient in some way”). And a POSITA would have known the one such possible deficiency for wirelessly transmitted data would have been dropouts. EX1011, ¶ 60. The ’307 patent admits that dropouts were a known problem. EX1001, 1:65-2:12 (discussing prior-art solutions to address “transmission errors such as dropouts”). The ’307 patent addresses this problem by using a request when a dropout occurs so that the

content can be resent to repair the dropout. *Id.*, 16:53-61. But that solution was already known and disclosed by Wood. EX1011, ¶¶ 60-61.

Wood discloses sending a request when a dropout is detected so that the content can be resent and combined with the previously received audio to repair the dropout. EX1008, 1:31-2:13, Figs. 1, 2. In Wood, video and audio are transmitted over a wireless broadcast channel to a recorder—receiver 10, which includes storage device 26 for storing the broadcast signal. *Id.*, 4:21-27. A processor detects an interval when the audio (or video) is lost (*id.*, 3:22-29); the recorder can respond via transceiver 20 and retrieve the lost content (“*local audio data*”) by requesting that the content be resent (*id.*, 3:30-4:10); and multiplexor 24 can combine the replacement portions (“*local audio data*”) with the previously received broadcast signal (“*remotely recorded audio data*”) (*id.*, 4:11-27).

Replacing a dropout with backup data was well known in the art for more than a decade, with papers on this technique having been published as far back as 1993. EX1011, ¶ 62. For example, *Dropout Replacement with Backup Recording at Tape’s Margin*, published by the IEEE, describes this concept for VCR recording. EX1007. Thus, in the event of a transmission failure from the local recording unit in Strub, it would have been obvious to a POSITA to fix the defect or gap in the remote recording, a problem Strub recognizes, with the local copy of that recording in post-processing, as Wood teaches. EX1011, ¶ 62.

A POSITA would have looked to the known technique in Wood because it applies to television broadcast signals—like the ones Strub uses to transmit its recording data from a local recording unit to a remote recording unit (EX1003, 35:54-57, 37:53-38: 4 (“conventional television signal transmitters and receivers”))—to improve signal quality (EX1008, 1:28-30), and produce a “program free of dropouts” (*id.*, 3:4-6). EX1011, ¶ 63. Accordingly, it would have been obvious to a POSITA to use one of the multiple transmission channels in Strub (EX1003, 36:10-29) or the wired connection in Strub (EX1003, 66:7-14) as the communication channel in Wood for receiving requests for a replacement from the remote recording unit to the local recording unit and for the local recording unit to provide the requested replacement, using the timestamps of Strub for synchronization. EX1011, ¶ 63.

3. Claim 2 “A system according to claim 1, wherein said local audio data includes at least one identifier selected from the group consisting of track identifiers, local audio device identifiers, performer identifiers, and combinations thereof”

Strub discloses claim 2 because, as explained, the “*local audio data*” may include an identifier that identifies the recording unit (“*local audio device identifiers*”) and/or the recorder (“*performer identifiers*”). *Supra* Section V.A.2.f; EX1003, 8:67-9:3 (obtaining biometric data, which identifies the recorder), 36:52-57 (identifying recording units), 39:31-35 (identifying a person attempting to

communicate with the recorder), 53:34-44 (identifying people present in recorded content), 55:59-64 (identifying the speaker); EX1011, ¶ 64.

4. Claim 3 “An apparatus or system according to claim 1 wherein said at least one local audio device is at least one bodypack”

Strub discloses claim 3 because Strub discloses that its recording unit can be a package worn on the recorder’s body (“*at least one bodypack*”). EX1011, ¶ 65. For example, it can be “attached to the waist strap” of the recorder (EX1003, 71:53-66, element 852 of Fig. 8B), integrated into a backpack (*id.*, 16:49-65, 70:52-67, Figs. 1, 8B), or a harness (*id.*, 73:24-50, Figs. 9A, 9B).

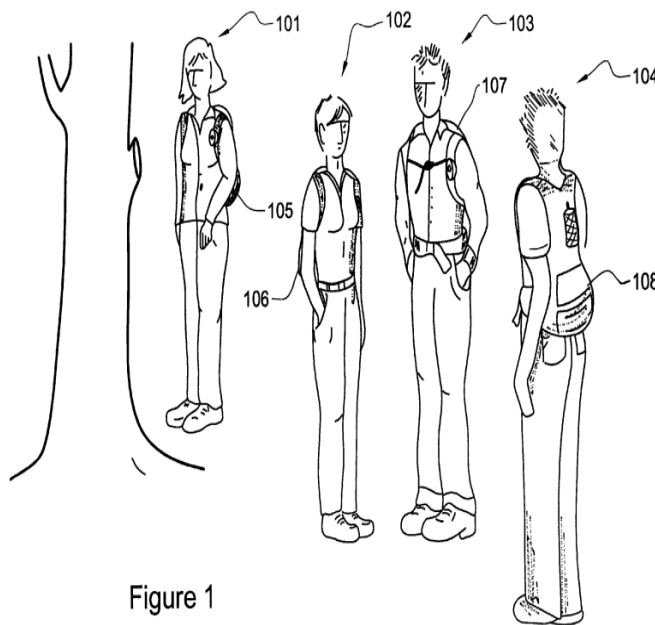


Figure 1

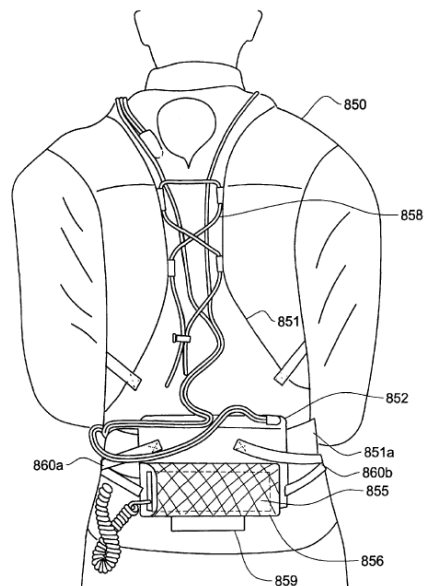


Figure 8B

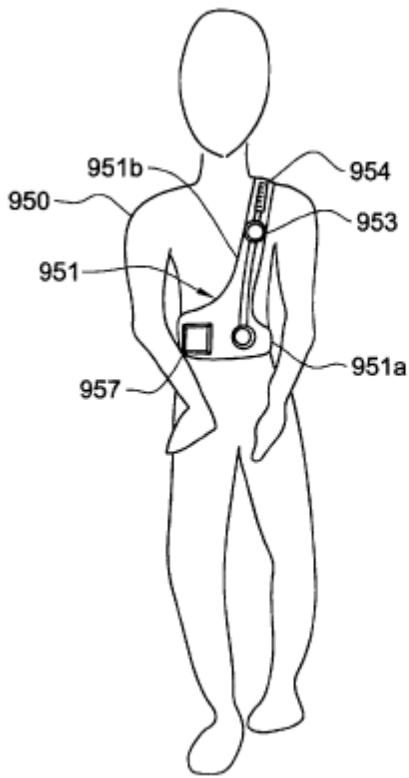


Figure 9A

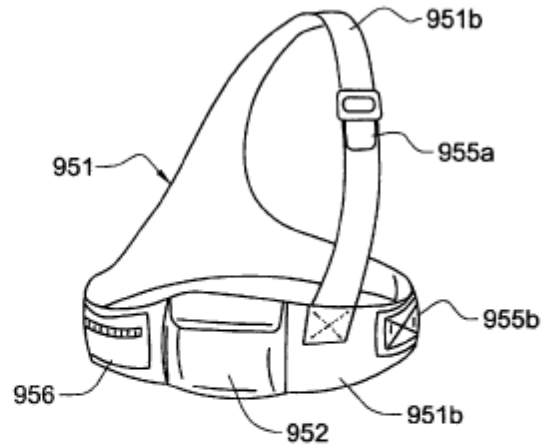


Figure 9B

EX1003, Figs. 1, 8B, 9A, 9B. Zaxcom argued that a device is a bodypack based on the device being “unobtrusive and easily hidden in garments and costumes,” consistent with the recording unit in Strub. EX1015 at 15; EX1003, 11:11-17 (“highly desirable that the recording unit be adapted to be mounted on (e.g., attached on, or worn by), rather than held by, the recorder”).

Grounds 1 and 2. If Zaxcom argues that Strub does not disclose a “bodypack,” such a form factor would have been an obvious design choice because Nagai also teaches an audio device that is a bodypack, as shown in Figures 2A and 2B. EX1004, ¶¶ 132-41, 144-46, Figs. 2A, 2B; EX1011, ¶ 66. Nagai’s bodypack looks like the bodypack in the ’307 patent. *Compare* EX1003, Fig. 2A with

EX1001, Fig. 3B, 11:56-57. A POSITA would have been motivated to use the conventional Nagai bodypack for Strub's recording unit—a simple substitution from one form factor to another—because it provides a more familiar and smaller package to house the recording unit, allowing the unit to be worn on the body in a less conspicuous and less obtrusive fashion. EX1011, ¶ 66. Strub itself recognizes the advantage of an integrated package, like Nagai, which enables the functionality of the recording unit to be “packaged more compactly.” EX1003, 46:10-24. The '307 patent concedes that prior-art wireless devices that transmit audio “may take the form of body packs” (EX1001, 1:39-64) and known bodypacks were “typically worn by news announcers, performers, and the like” (*id.*, 8:50-56). EX1011, ¶ 66.

5. Claim 4 “*An apparatus or system according to claim 1 wherein said creator of said locally generated audio is a live performer*”

Strub discloses claim 4 because the local audio device may be worn by a performer to make live recordings. EX1003, 4:21-31, 93:26-27, 94:20-27; EX1011, ¶ 67. The device may be used to record the performance of athletic activities (EX1003, 67:59-61) and voices or musical instruments (*id.*, 25: 45-46) and may record from the first-person point of view (*id.*, 8:20-29). Zaxcom argued that claim 4 is satisfied by a device that may be used by “a live performer, such as an athlete, public speaker, wedding participant, or other performing talent.”

EX1015 at 15.

6. Claim 5 “wherein said at least one local audio device further includes: *At least one audio output port*”

Strub discloses claim 5 because it discloses playing audio locally at the recording unit using an attached headset. EX1003, 39:66-40:11; EX1011, ¶ 68. “The audio recording display device can also be a headset, such as is commonly used with a variety of portable audio devices.” EX1003, 45:23-50 (“audio output portion (speaker and related circuitry)”; *id.*, 39:12-40 (“audio output”), 39:60-40:11, 59:26-49. A POSITA would have understood this to disclose a port for connecting the headset. EX1011, ¶ 68. Zaxcom argued that “a Headphone/Line Output” is an audio output port. EX1015 at 16.

The headset and associated port in Strub is like audio output device 330 (e.g., “headphones”) and audio output device port 328 in the ’307 patent. EX1001, 9:37-60, Fig. 3A; EX1011, ¶ 69. The ’307 patent discloses “audio output device port 328” as “any commercially available audio output device port that is compatible with local audio output device 330 and the internal components of local audio device 102.” EX1001, 9:37-56 (“transmission through local audio output device port 328 to local audio output device 330,” i.e., “any commercially available audio output device such as headphones, speakers, and the like”). And Figure 3A of the ’307 patent, below, shows audio output device port 328 as a standard headphone jack connected to headphones 330. *Id.*; EX1011, ¶ 69.

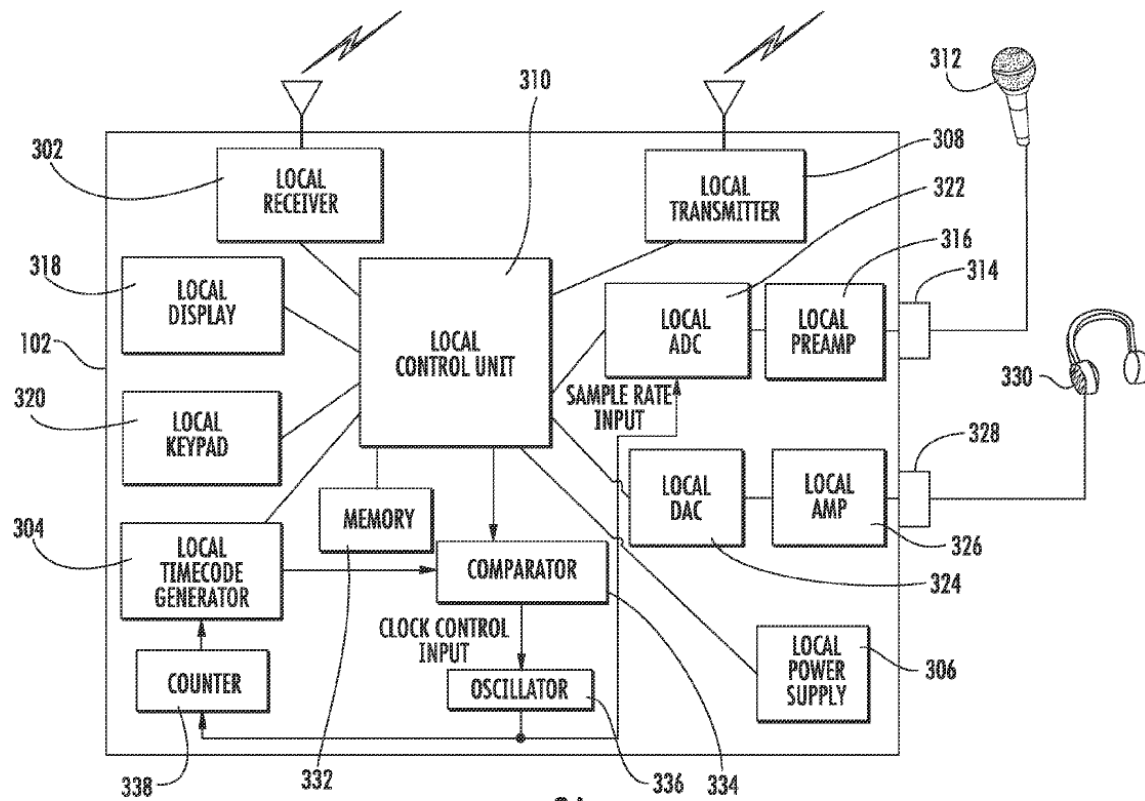


FIG. 3A

EX1001, Fig. 3A.

Strub also discloses claim 5 because it discloses wirelessly transmitting audio from the recording unit to another recording unit via wireless transmitter 309, as explained above for claim 1. *Supra* Section V.A.2.a; EX1011, ¶ 70. Claim 6, which depends from claim 5, recites transmitting audio “*from said at least one local audio output port directly or indirectly to a remote recorder,*” and the ’307 patent only describes transmitting audio to a remote recorder via wireless transmitter 308. EX1001, 8:65-9:29, 10:22-29 (“audio may also be transmitted through local transmitter 308 to . . . recorder 108 to allow recording”),

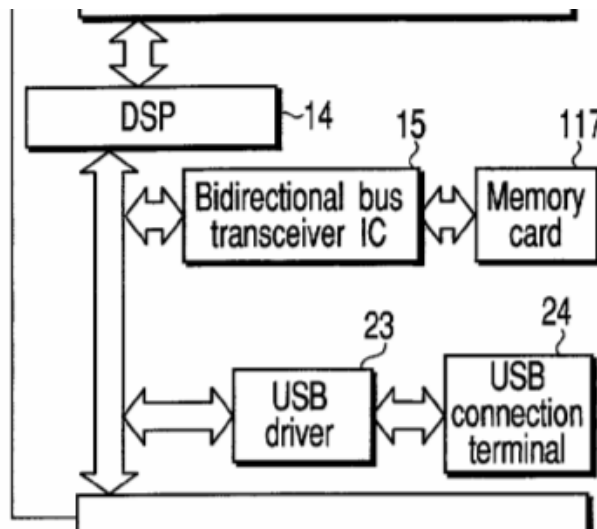
Figs. 1, 3A.⁵ Thus, a POSITA would have understood the wireless transmitter in Strub to be the claimed “*audio output port*.” EX1011, ¶ 70; EX1016, ¶¶ 24 (“wireless communications port”), 40 (defining “port” to include “any suitable connector, connection, interface, ... transmitter socket or port ... able to receive or transmit data or signals”); EX1017, at 5 (claim 4: “wireless port for receiving audio content wirelessly”), ¶¶ 22 (“wireless input port”), 24, 25 (referring to “audio output port” as being “wireless”); EX1018, at 3 (claim 7: “wireless sound port”), ¶ 3 (“wireless port”).

If Zaxcom argues that Strub does not disclose an “*audio output port*,” this limitation would have been obvious, such as by using the USB port or another port

⁵ The limitations in claims 5 and 6 were first introduced in new claims added during prosecution. EX1002 at 81 (claims 24 and 25). The ’307 patent’s specification only describes a “local audio device output port” for transmitting audio from the local audio device to an “audio output device such as headphones.” EX1001, 9:48-56, Fig. 3A. The specification does not use the term “*audio output port*” or expressly discuss transmitting locally generated audio “*from said at least one local audio output port directly or indirectly to a remote recorder*.” EX1011, ¶ 70.

that Strub discloses for connecting the recording unit to other devices as an audio output port. EX1011, ¶ 71.

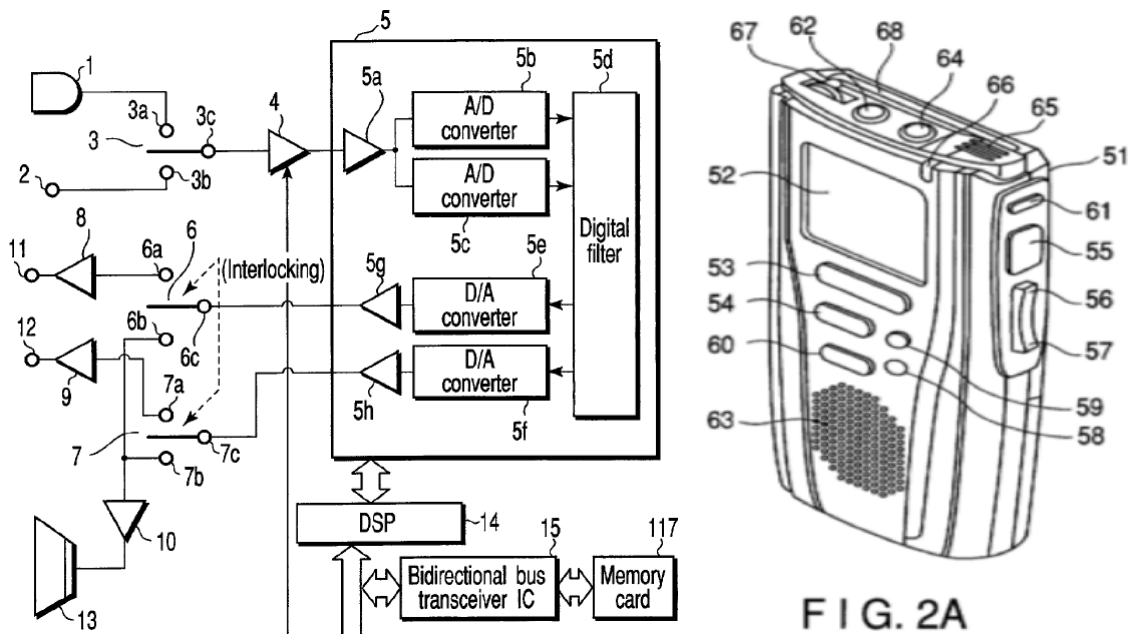
A POSITA would have understood that the ports for connecting other devices in Strub could have been used to output audio data, making them audio output ports. EX1011, ¶ 72. Strub discloses that a recording unit can connect to other devices via known, predictable techniques, including a serial port or a bus protocol, such as the universal serial bus (“USB”), IEEE 1394 (e.g., Firewire or iLink) and/or IIC (i.e., I²C) protocols. EX1003, 66:7-25. Strub describes this as “desirable ... so that additional devices can easily be added to the recording unit.” *Id.* Nagai also discloses transmitting audio data using USB and including a USB terminal on the voice recording and reproducing apparatus, as shown in Figure 1. EX1004, ¶¶ 124-26.



EX1004, Fig 1 (partial); EX1011, ¶ 72.

A POSITA would have found it obvious to use the USB port or other types of ports in Strub to output audio data, for example, to do post-processing and dropout correction on another recording unit in Strub, as explained above for claim 1. EX1011, ¶ 73. A POSITA would have been motivated to use the USB port in Strub as an audio output port because, in addition to “easily” adding external devices and being “desirable,” as Strub teaches (EX1003, 66:7-25), USB can (1) use less power than wireless transmissions, (2) provide faster file transfers, and (3) provide a backup in the event that the transmitter of the recording unit is damaged. EX1011, ¶ 73.

Grounds 1 and 2. In addition, this limitation would have been obvious to a POSITA, such as by integrating a conventional headphone jack, based on the teachings of Strub and Nagai. Nagai discloses a headphone jack (11 and 12, or 62) as part of its voice recording and reproducing apparatus, as shown in Figures 1 and 2A, below. EX1004, ¶¶ 139, 140; Figs. 1, 2A; EX1011, ¶ 74. It would have been obvious to a POSITA to have used a headphone jack, like in Nagai, on the recording unit in Strub, so that, for example, the performer has the benefit of playback and hearing what is being recorded. *Id.* And a conventional headphone jack allows the performer to use any standard headphone set to do so. *Id.*



EX1003, Figs. 1 (partial, headphone terminals 11, 12), 2A (headphone jack 62).

Grounds 3 and 4. This limitation would also have been obvious to a POSITA by integrating a conventional headphone socket, based on the teachings of Strub and Gleissner. EX1011, ¶ 75. Gleissner similarly discloses that a recording unit may also have a conventional socket for a headphone, as shown in Figure 1 below, which likewise provides the advantages of playback and that “the person using the microphone also simultaneously hears what is spoken into the microphone.” EX1005, ¶ 33; *id.*, ¶ 27 (“unit is preferably provided with a headphone socket ... so the reporter using the microphone ... also always knows which audio data signals he is recording”); EX1011, ¶ 75.

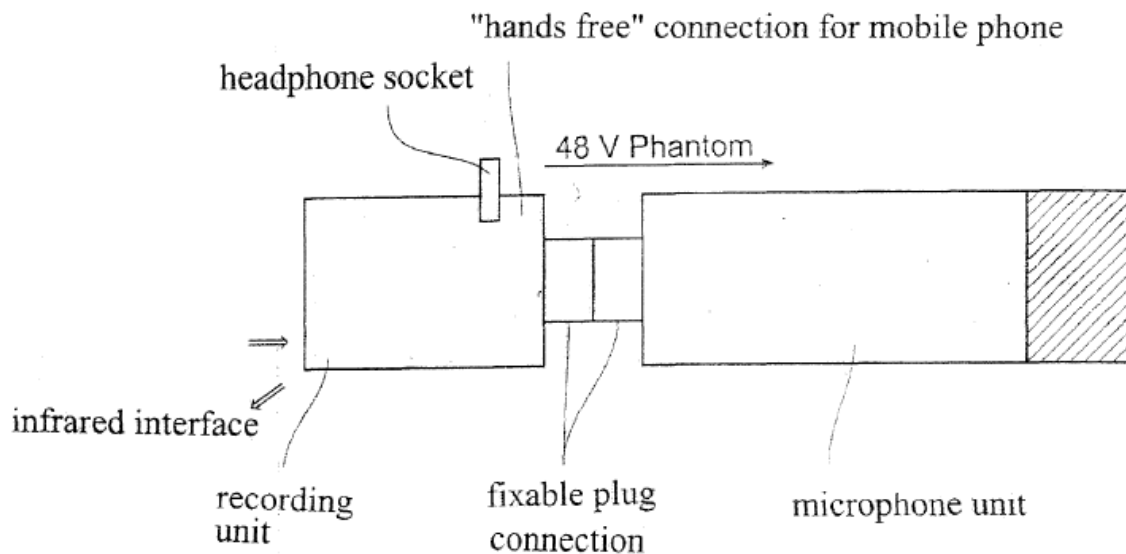


Fig. 1

EX1005, Fig. 1.

7. Claim 6 “wherein said locally generated audio is transmitted from said at least one local audio output port directly or indirectly to a remote recorder”

The teachings of Strub and Nagai (Grounds 1 and 2) and Strub and Gleissner (Grounds 3 and 4) render obvious claim 6 because the claim is disclosed by Strub, Nagai, and Gleissner. EX1011, ¶76 As discussed above for claim 5, each of Strub, Nagai, and Gleissner discloses an audio output port through which the locally generated audio may be transmitted to an external device, such as a remote recorder. *Supra* Section V.A.6. Zaxcom argued that claim 6 may be satisfied by a “Headphone/Line Output” that is capable of transmitting audio directly by a wired connection or indirectly via a wireless transmitter to a receiver or recorder (EX1015 at 18-19), like the audio output ports in Strub (headset port, USB, or

wireless transmitter), Nagai (headphone jack), and Gleissner (headphone socket) (*supra* Section V.A.6).

8. Claim 7 “*wherein said audio input device is a microphone*”

The teachings of Strub and Nagai (Grounds 1 and 2) and Strub and Gleissner (Grounds 3 and 4) render claim 7 obvious because they disclose a microphone as the audio input device, as explained above for claim 1. *Supra* Section V.A.2.d; EX1003, 21:65-22:2 (“audio data acquisition device (e.g., microphone)”); EX1004, ¶ 100 (“microphone (referred to as a mike hereinafter) 1”), Fig. 1; EX1005, ¶¶ 14, 20, 23 (“standard microphone”), Fig. 1; EX1011, ¶ 77. Zaxcom argued that an input connector compatible with microphones satisfies this claim. EX1015 at 20.

9. Claim 8 “*wherein said at least one memory is removable from said at least one local audio device*”

Strub discloses claim 8 because it discloses that the recording unit (*local audio device*) may use “a *removable* data storage medium.” EX1003, 35:21-50 (emphasis added); *id.*, 27:36-51; EX1011, ¶ 78. Nagai and Gleissner also disclose removable memory, as explained below for claim 9. *Infra* Section V.A.10.

10. Claim 9 “*wherein said at least one memory is a memory card*”

Strub discloses claim 9 because it discloses that its data storage medium (*memory*) can be “removable” and implemented as “flash memory.” EX1003, 35:21-41. A POSITA would have understood removable flash memory to include

“*a memory card*,” which were conventional for portable devices like Strub’s recording unit. EX1011, ¶ 79.

If Zaxcom argues that Strub does not disclose “*a memory card*,” Strub in combination with Nagai (Grounds 1 and 2) or Gleissner (Grounds 3 and 4)—each discloses a memory card—renders obvious using a memory card as the memory in Strub’s recording unit. EX1011, ¶ 80. Memory cards—a conventional type of removable, flash memory—were commonly implemented in portable recording devices. *Id.* A POSITA would have viewed the known, predictable technique of using a memory card as advantageous for a wearable recording unit because it is relatively small and lightweight; consumes relatively little power; and has no moving parts that can fail, as Strub teaches. EX1003, 35:31-40; EX1011, ¶ 80. Strub also highlights as advantageous memory that “would enable the recording unit to be used ‘in the field’ for a longer period time” (EX1003, 35:21-30), which includes a memory card because a full card can be replaced with a new card for additional storage. EX1011, ¶ 80.

Grounds 1 and 2. Nagai discloses storing local audio data on “memory card 117” in the audio recording device, which can be removed from the device by using eject button 73. EX1004, ¶¶ 106 (“memory card 117 is formed by a semiconductor memory such as a flash memory”), 145, 147-58 (explaining how

audio data is stored on the memory card), 162, 164, 165, Figs. 1, 2B, 4-6; EX1011, ¶ 81.

Grounds 3 and 4. Gleissner discloses using a conventional memory card to store recording data. EX1005, ¶¶ 6 (“audio data stored on a *media card* (RAM, *Flash* etc.”), 25 (“data memory for storing the audio signals, wherein this may be a hard disc or another *known data memory* including a digital semiconductor memory (flash) or a *media card*”) (emphases added); EX1011, ¶ 82.

11. Claim 10 “*wherein said time data includes at least one of the group consisting of hour data, minute data, second data, and combinations thereof*”

Strub discloses claim 10 because it discloses that its GPS receiver (“*local audio device receiver*”) can receive the current time (“*time data*”) to timestamp audio data. EX1003, 63:41-60 (“GPS receiver can also be used to receive a signal representing the current time”; “GPS time signal can be updated about once a second”; “GPS time signals are extremely accurate”), 29:58-62, 33:33-52, 75:47-48; EX1011, ¶ 83. A POSITA would have understood that the time in a GPS signal includes hours, minutes, and/or seconds (i.e., “*at least one of the group consisting of hour data, minute data, second data, and combinations thereof*”). *Id.* (explaining that such time signals are generally provided in Universal Coordinated Time (UTC) format by typical GPS modules, e.g., the RF Solutions LS-40MM GPS Receiver module); EX1019 at 4.

12. Claim 11 “wherein said digital data includes setting data for said at least one local audio device”

Strub discloses claim 11 because Strub’s recording unit may wirelessly receive digital data from the control interface device (EX1003, 45:51-62:25, Fig. 5) that includes instructions (“*setting data*”) for the recording unit (“*local audio device*”). EX1003, 37:53-62 (“digital transmitters/receivers can be used”; “digital devices are more reliable”), 45:51-67 (“control interface device includes all of the mechanisms for enabling the recorder to effect control of the operation of the recording unit”), 47:33-48 (“particularly desirable for the recording unit to be implemented to enable wireless communication ... between the controller interface device ... and the remainder of the recording unit”), 64:50-65:15 (describing wireless communication between components); EX1011, ¶ 84.

These instructions may include “control settings of the data acquisition device (e.g., setting of the lens focusing mechanism, white balance, pedestal, aperture and/or gain of the visual data acquisition device, or setting of the audio pickup pattern of the audio data acquisition device).” EX1003, 89:21-38; EX1011, ¶ 85. The control interface device enables the recorder to control operation of the recording unit, for example, starting or stopping the recording unit. EX1003, 47:49-51. The control interface device also includes a mechanism that enables the recorder to specify the amount of compression. EX1003, 49:39-41. The ’307 patent

similarly discloses adjusting audio parameters and transmission settings. EX1001, 8:36-49, 11:55-12:23 (“settings such as transmitter bandwidth, audio sampling parameters, and the like”); EX1011, ¶ 85.

B. Grounds 5 and 6: Claims 12-14 Is Anticipated by Strub and Rendered Obvious over Strub in View of Wood

Strub discloses all the limitations of claims 12-14 (Ground 5). Like for Grounds 2 and 4 above, Strub may be further combined with Wood (Ground 6), which discloses a different embodiment than Strub for the element “*wherein said local audio data is retrieved during or subsequent to said audio event and is combined with said remotely recorded audio data*” in claim 12, to the extent this element is even limiting. Accordingly, these grounds are not redundant.

1. Claim 12

- a. **[12.0] “12. A method of locally recording locally generated audio, said locally generated audio also being wirelessly transmitted to, and remotely recorded by, a remote recorder as remotely recorded audio data comprising the steps of:”**

If the preamble is limiting,⁶ Strub discloses it for the same reasons as for the preamble of claim 1. *Supra* Section V.A.2.a; EX1011, ¶ 87. Strub’s recording unit records locally generated audio and wirelessly transmits that audio to another recording unit (“*a remote recorder*”), which remotely records the audio. *Id.*

⁶ Zaxcom argued that the similar preamble in claim 1 is not limiting. EX1015 at 2.

b. [12.1] “locally receiving said local audio generated by at least one performer during an audio event:”

Strub discloses element [12.1] for the same reasons as elements [1.1] and [1.3] and claim 4. *Supra* Section V.A.2.b, V.A.2.d, V.A.5; EX1011, ¶ 88. Strub’s recording unit locally receives local audio generated by a performer wearing the recording unit to make live recordings during an event, including voice or musical instruments. *Id.*

c. [12.2] “transmitting said local audio, directly or indirectly, to at least one of the group consisting of a recorder, a receiver, and combinations thereof;”

Strub discloses element [12.2] for the same reasons as the preamble of claim 1 and claim 6. *Supra* Section V.A.2.a, V.A.7; EX1011, ¶ 89. The transmitter of Strub’s recording unit transmits the local audio directly or indirectly to the receiver (“receiver”) of another recording unit (“recorder”). *Id.*

d. [12.3] “locally recording said local audio as local audio data in at least one memory of at least one local audio device wearable by a creator of said local audio”

Strub discloses element [12.3] for the same reasons as elements [1.1], [1.4], and [1.5]. *Supra* Section V.A.2.b, V.A.2.e, V.A.2.f; EX1011, ¶ 90. Strub’s recording unit stores the local audio as local audio data in its data storage device (“at least one memory”), and the recording unit is wearable by a creator of the local audio. *Id.*

- e. **[12.4] “remotely recording said transmitted local audio via at least one of the group consisting of a recorder, a receiver, and combinations thereof as remotely recorded audio data”**

Strub discloses element [12.4] for the same reasons as the preamble of claim 1. *Supra* Section V.A.2.a; EX1011, ¶ 91. The other, remote recording unit (“recorder”) receives (via “a receiver”) and records the transmitted local audio. *Id.*

- f. **[12.5] “wherein said local audio data is retrieved during or subsequent to said audio event and is combined with said remotely recorded audio data.”**

For the same reasons as element [1.6], Strub alone (Ground 5) discloses element [12.5], and Strub in combination with Wood (Ground 6) renders obvious element [12.5]. *Supra* Section V.A.2.g; EX1011, ¶ 92. Like the ’307 patent, Strub discloses time stamping audio recordings for post-event synchronization, i.e., for retrieving the local audio data and combining it with remotely recorded audio data. *Id.* If Strub does not disclose element [12.5], Wood discloses retrieving the local audio data and combining it with remotely recorded audio data to repair a drop out, like in the ’307 patent. *Id.* As explained, it would have been obvious to add these conventional steps from Wood—a known technique—to the method disclosed in Strub to yield predictable results. *Id.*

2. Claim 13 “locally receiving or generating master time data; wherein said master time data includes at least one of the group consisting of hour data, minute data, second data, and combinations thereof”

Strub discloses claim 13 for the same reasons as claim 10. *Supra* Section V.A.11; EX1011, ¶ 93. Strub’s recording unit receives a signal representing the current time (“*master time data*”) via a GPS receiver to timestamp the recording data, and the current time “*includes at least one of a group consisting of hour data, minute data, second data, and combinations thereof.*” *Id.*

In addition, Strub discloses locally receiving an SMPTE time code (“*master time data*”). EX1003, 75:25-57 (“SMPTE time code input”). A POSITA would have understood that an SMPTE time code may include hours, minutes, and/or seconds, as the ’307 patent acknowledges in describing prior-art methods. EX1001, 1:39-54 (“In many such systems, the received audio ... is timestamped with a time reference signal such as a Society of Motion Picture and Television Engineers (‘SMPTE’) time-code signal containing information regarding the hour, minute, second, frame, ...”); EX1011, ¶ 94.

Moreover, as explained, Strub’s recording unit may also include a clock for locally “*generating*” a time (“*master time data*”) used to timestamp the recording data and that includes hour, minute, and/or second data. *Supra* Section V.A.1.a, V.A.2.g; EX1003, 13:48-67 (“system controller can include a clock that is used to

time-stamp the recording data”; “time-stamps can be used, for example, to display the time at which a displayed recording was obtained”), 63:50-60 (“internal clock ... that ... can be used to accurately time-stamp data”), 79:63-65; EX1011, ¶ 95.

3. Claim 14 “manipulating said local audio data contained in at least a portion of said memory; wherein said manipulation includes at least one of a group consisting of ... adding a local audio device identifier to at least a portion of said memory, ... adding said performer identifier to at least a portion of said local audio data”

Strub discloses claim 14 for the same reasons as claim 2. *Supra*

Section V.A.3; EX1011, ¶ 96. Strub’s recording unit manipulates the local audio data in memory by adding an identifier that identifies the recording unit (“*local audio device identifier*”) and/or the recorder (“*performer identifier*”). *Id.*

C. Ground 7: Claims 1-7 and 10-14 Are Anticipated by Lee

1. Lee

Like the ’307 patent, Lee discloses a system including a wearable device that locally records and wirelessly transmits audio recorded by an internal microphone or external lavalier microphone. EX1009, ¶ 30. Lee discloses a “wireless digital audio recorder and transceiver body pack (Body Pack Transceiver or BPT)” worn, for example, by a law enforcement officer to record the officer’s actions during an event. *Id.*, ¶¶ 3, 29. Lee also refers to the body pack transceiver as a “wireless microphone.” *Id.*, Abstract, ¶¶ 5, 6, 28, 29.

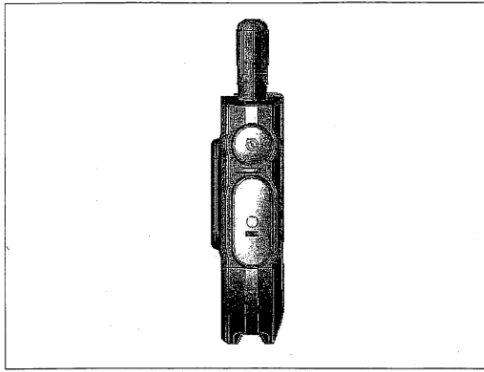


Fig. 11

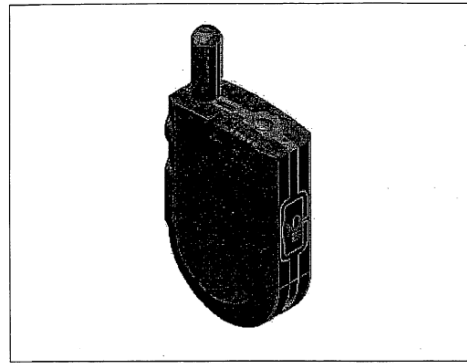


Fig. 12

EX1009, Figs. 11, 12; EX1011, ¶ 97.

Lee's BPT, shown in Figure 7 below, buffers and stores the audio information that it receives and wirelessly streams the audio information in real-time for recording by a mobile digital recording system. EX1009, ¶ 9; EX1011, ¶ 99. The BPT includes **microprocessor 230** electrically coupled to **infrared transceiver 240** and **radio transceiver 210**, **microphone 101**, and **memory 250**. EX1009, ¶ 30. The BPT may also include an "external lavalier microphone." *Id.* **Infrared transceiver 240** receives digital pairing data from the in-vehicle system, including the compression mode, user identification, and time synchronization information. *Id.*, ¶¶ 12, 30-32, 36, 39, 41. For time synchronization, a centralized time-reference of an intelligent information management system may utilize an external time-reference source such as the Time Service Department of the United States Naval Observatory, the National Institute of Standards and Technology, or a GPS signal. *Id.*, ¶ 12.

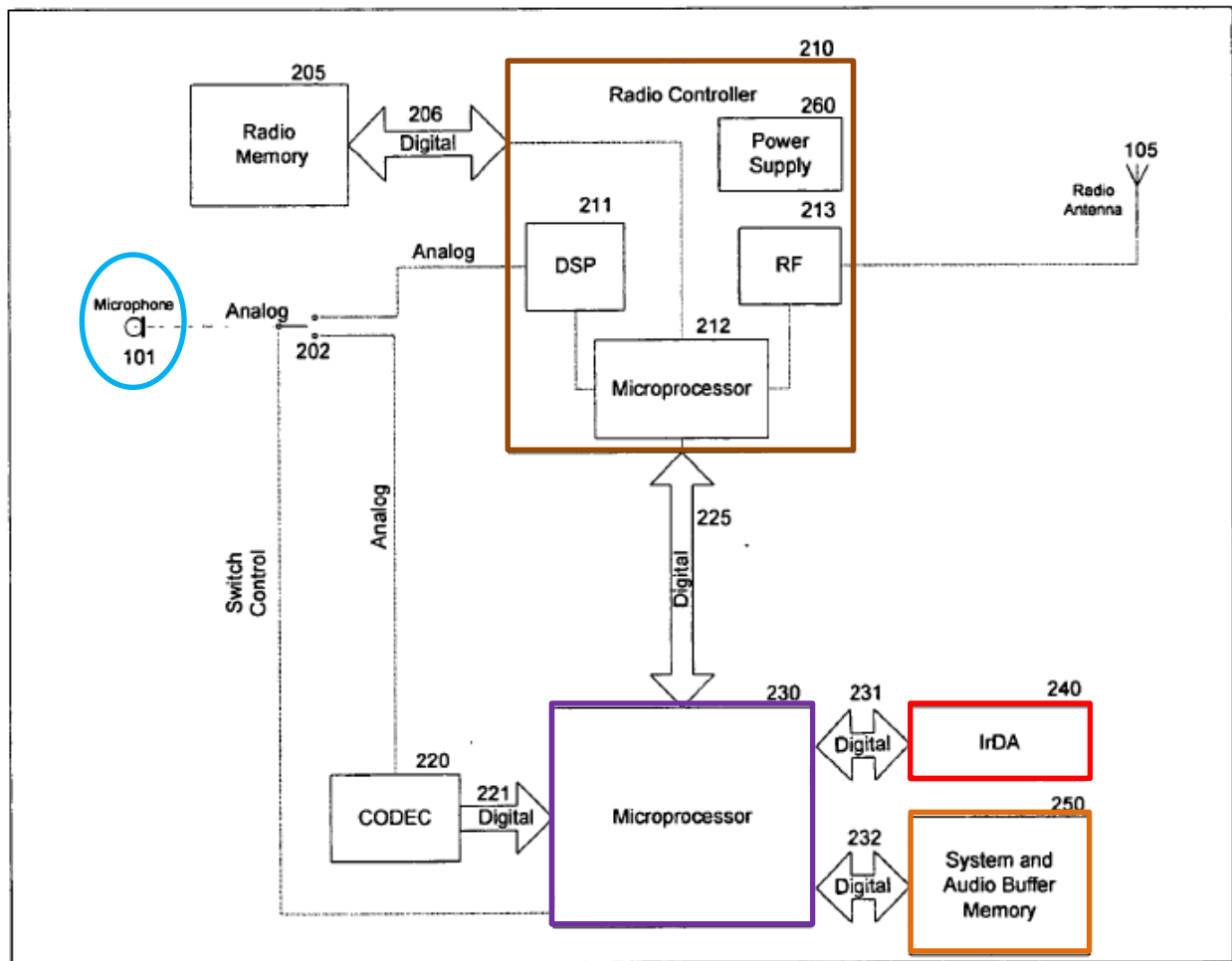


Figure 7: Body Pack Transceiver (BPT) Block Diagram

EX1009, Fig. 7 (annotated); EX1011, ¶ 98.

As shown in Figure 6 below, the BPTs worn by users may wirelessly communicate with a remote recording system, e.g., the in-vehicle transceiver (IVT). EX1009, ¶ 21; EX1011, ¶ 98. When a BPT is too far from the IVT for the IVT to receive an audio stream, the BPT stores or buffers an “out of range” audio stream. EX1009, ¶¶ 34-38; EX1011, ¶ 98. And when the BPT is back in range, the

BPT transmits the buffered audio stream to the IVT for synchronizing—using time-stamps like in the '307 patent—with a “past” video stream on the IVT. *Id.*

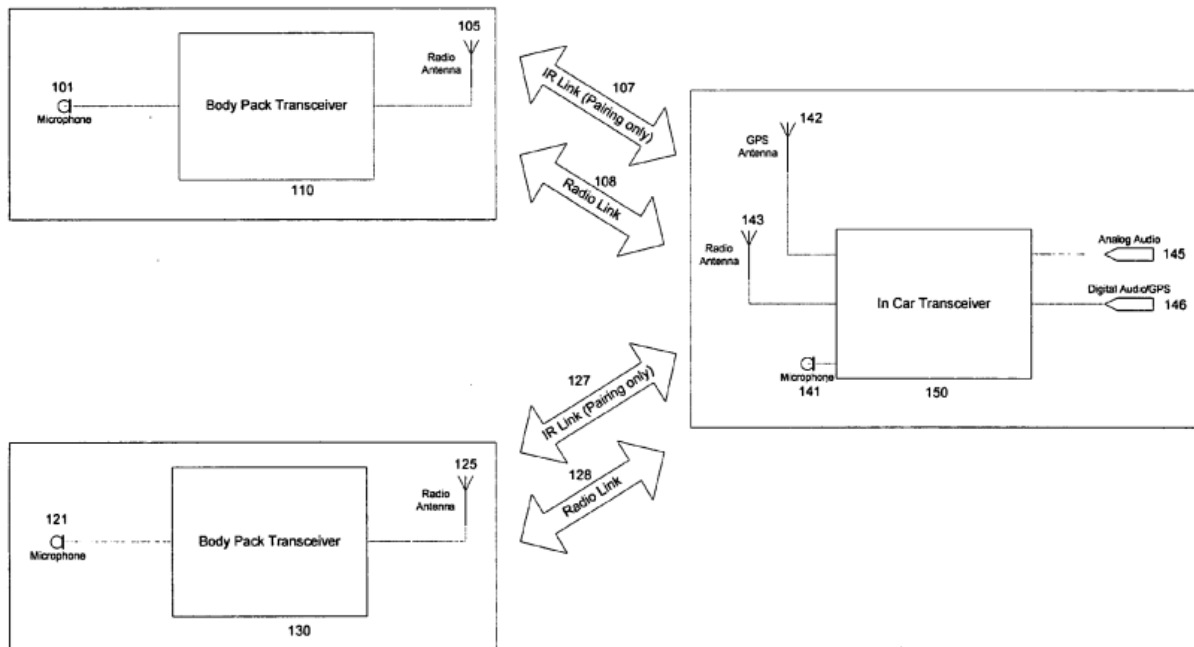


Figure 6: Wireless Microphone System Diagram

EX1009, Fig. 6.

2. Lee is prior art because it is entitled to its provisional date

Lee claims priority to a provisional application (“the provisional,” EX1013), filed May 31, 2005, and is entitled to that date for prior art purposes under § 102(e). EX1009, ¶ 1. To claim priority to a provisional, it must disclose and enable “the invention *claimed* in the *non-provisional* application.” *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015); 35 U.S.C. § 119(e). The provisional, which includes substantially similar drawings

and disclosures as in Lee, provides written description and enablement support for at least claim 1 of Lee (EX1009, ¶ 5), as explained below. EX1011, ¶ 101.

a. 1. An apparatus for recording and storing digital audio and telemetry information comprising:

The provisional discloses this element:

The present invention discloses apparatus and techniques associated with the authentication, *capture*, attribution, transfer, *storage*, retention, management and deletion of *digital audio and telemetry information* that has been collected or *recorded* by a wireless microphone system.

EX1013, ¶ 4 (emphases added); *see also id.*, ¶¶ 3, 8, 13; EX1011, ¶ 102.

b. at least one body pack transceiver (BPT) separably associated with a mobile digital recording system installed within a vehicle;

The provisional discloses this element because it discusses “pairing one or more wireless microphones [i.e., a body pack transceiver or BPT] with a mobile digital recording system” installed in a vehicle (i.e., an in-vehicle transceiver or IVT), and the ability of the BPT to pair with one system at a time and being able to pair with different systems. EX1013, ¶¶ 5, 10, 16 (“a wireless digital audio recorder and transceiver (Body Pack Transceiver or BPT”), 17 (“BPT is comprised of ... a microphone”), 18 (“in-vehicle mobile digital recording system”), 23, 30, 31; EX1011, ¶ 103.

c. an In-Vehicle transceiver (IVT) to send and receive transmissions to and from said BPT;

The provisional discloses this element: “an in-vehicle transceiver to send and receive signals to/from wireless microphone (In-Vehicle Transceiver or IVT).” EX1013, ¶¶ 16; *id.* ¶¶ 4, 13, 17, 19, Figs. 6 (illustrating two-way transmissions between the IVT and the BPT), 8; EX1011, ¶ 104.

d. at least two infrared communications transceivers;

The provisional discloses this element because the IVT and each BPT has an infrared communication transceiver for a two-way infrared data link between the devices, as shown in Figures 6-8. EX1013, ¶¶ 17 (“BPT is comprised of ... an infrared transceiver”; “IVT is comprised of ... an infrared transceiver”), 28 (“Infrared Pairing Activation”; “two-way infrared data link”), 29, 31, 41, Figs. 6 (illustrating three infrared communications transceivers in a system with an “IR Link” between the IVT and each of the BPTs), 7 (illustrating infrared transceiver (“irDA”) in the BPT), 8 (illustrating same in the IVT); EX1011, ¶ 105.

e. at least two radio frequency (RF) communications transceivers,

The provisional discloses this element because the IVT and each BPT has a radio frequency (RF) communications transceiver, as shown in Figures 6-8. EX1013, ¶¶ 14 (“radio frequency transceivers”), 16 (“transceiver body pack”; “in-vehicle transceiver to send and receive signals”), 17 (“BPT is comprised of ... a

radio transceiver”; “IVT is comprised of ... a radio receiver”), 23 (“in-vehicle transceiver”), Fig. 6 (illustrating three RF antennas, one in the IVT and each of the two BPTs, and a two-way “RF Link” between the IVT and each BPT), 7 (illustrating RF communications transceiver (“Radio Controller”; “RF”) and RF antenna (“Radio Antenna”) in BPT), 8 (illustrating same in IVT); EX1011, ¶ 106.

f. and at least two radio communications antennas.

The provisional discloses this element because the IVT and each BPT include a radio communication antenna (“*at least two*”), as shown in Figures 6-8. EX1013, ¶ 17 (“BPT is comprised of ... an antenna”; “IVT is comprised of ... an antenna”), Figs. 6 (illustrating three RF antennas, one in the IVT and one in each BPT), 7 (illustrating “Radio Antenna” attached to “RF” in the “Radio Controller” in BPT), 8 (illustrating same in IVT); EX 1011, ¶ 107.

3. Claim 1

a. [1.0] “An apparatus or system for locally recording locally generated audio, said locally generated audio also being wirelessly transmitted to, and remotely recorded by, a remote recorder as remotely recorded audio data”

If the preamble is limiting, Lee discloses it. EX1011, ¶ 108. Lee discloses a body pack (“*apparatus or system*”) that buffers and stores audio information it receives (“*locally recording locally generated audio*”) and that wirelessly streams the audio information in real-time (“*said locally generated audio also being*

wirelessly transmitted to)” for recording by a mobile digital recording system (“a remote recorder” that records the audio “as remotely recorded audio data”).

EX1009, ¶ 9, Figs. 6-8; EX1013, ¶ 8, Figs. 6-8. As Figure 6 illustrates, the body pack transceiver (“BPT”) locally records locally generated audio and wirelessly transmits the locally generated audio to the remote in-vehicle (or in-car) transceiver (“IVT”), which remotely records the audio as remotely recorded audio data. EX1009, ¶¶ 5-15; EX1013, ¶¶ 4-14; EX1011, ¶ 108.

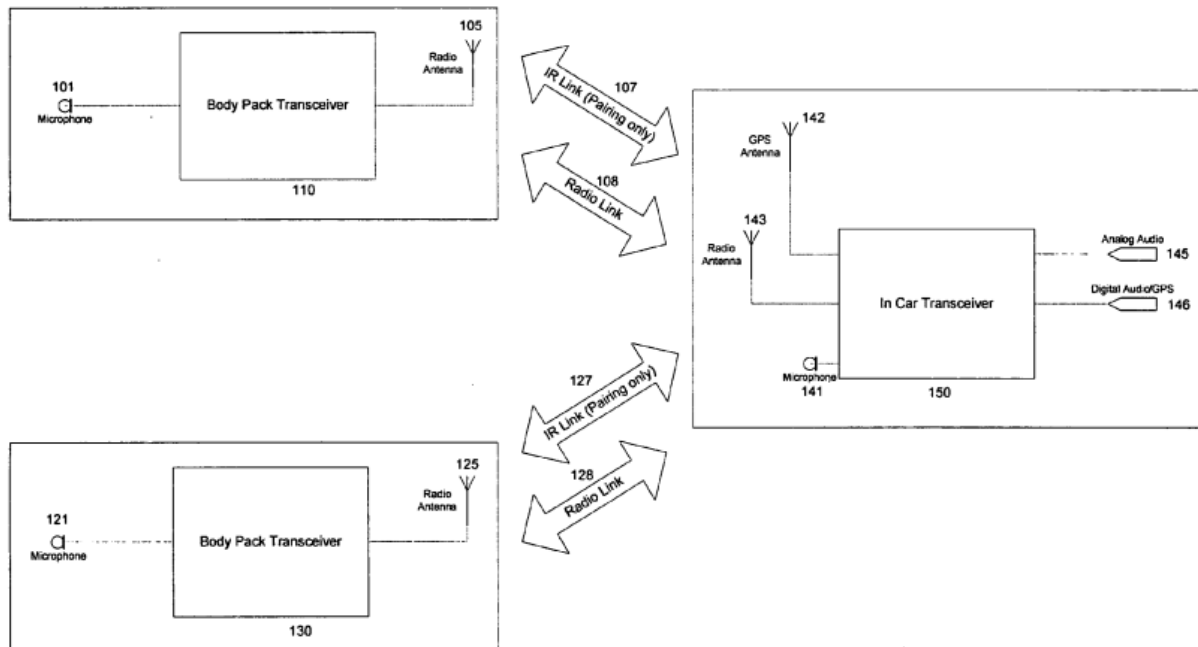


Figure 6: Wireless Microphone System Diagram

EX1009, Fig. 6; EX1013, Fig. 6.

Figure 7 of Lee shows that the BPT includes **microprocessor 230** electrically coupled to **infrared transceiver 240** and **radio transceiver 210**, **external microphone 101**, and **memory 250**. EX1009, ¶ 30.

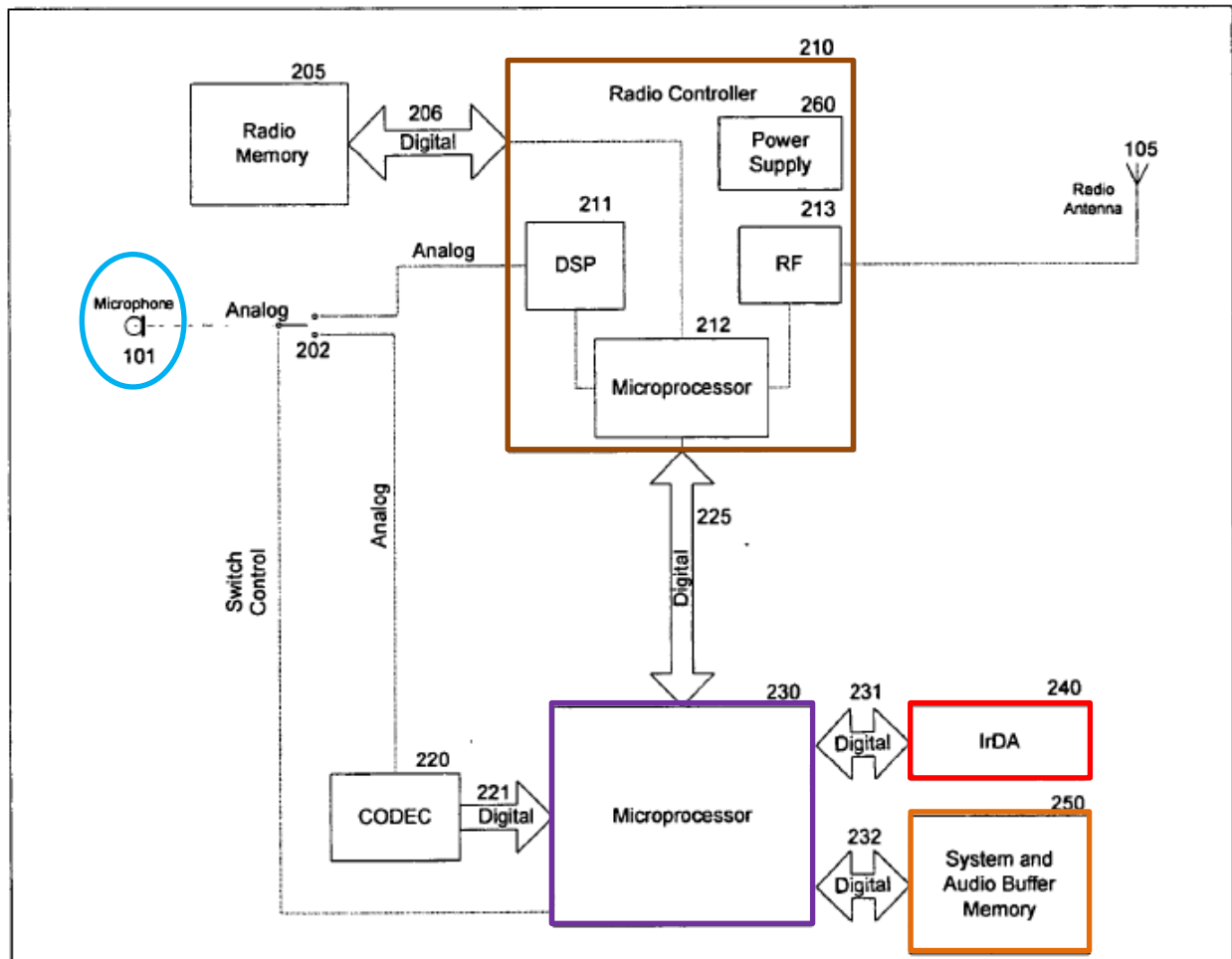


Figure 7: Body Pack Transceiver (BPT) Block Diagram

EX1009, Fig. 7 (annotated); EX1013, Fig. 7 (annotated); EX1011, ¶ 109.

b. [1.1] “at least one local audio device wearable by a creator of said locally generated audio”

Lee discloses element [1.1] as a “wireless digital audio recorder and transceiver body pack (Body Pack Transceiver or BPT)” (“*local audio device*”), worn by an officer or other individual (“*creator*”) to live record locally generated audio during an event. EX1009, ¶¶ 3, 29, Fig. 7; EX1013, ¶¶ 2, 19.

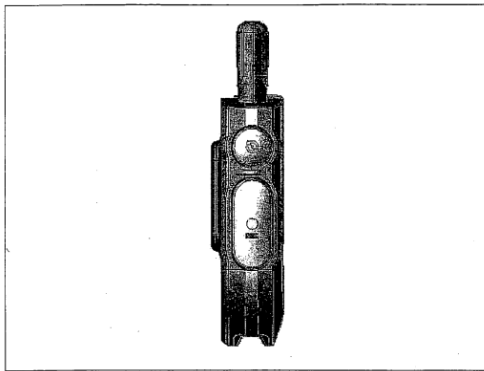


Fig. 11

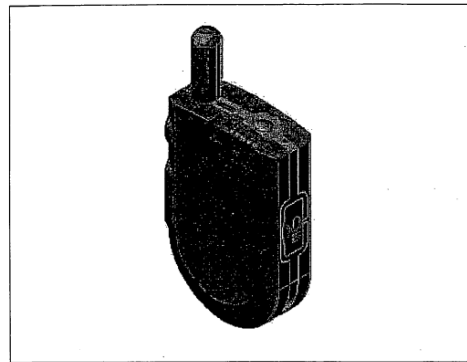


Fig. 12

EX1009, Figs. 11, 12; EX1013, Figs. 10, 15; EX1011, ¶ 110. Figure 11 shows a mounting clip feature on the left side, allowing the device to be worn, e.g., on a belt. EX1009, Fig. 11; EX1013, Figs 10, 12, ¶ 44 (“mounting clip feature”); EX1011, ¶ 110.

c. [1.2] “at least one local audio device receiver for receiving at least one of the group consisting of digital data, time data, and audio data”

Lee discloses element [1.2] in multiple ways because the bodypack includes multiple local audio device receivers (“*at least one local audio device receiver*”)—

e.g., infrared transceiver 240 and radio transceiver 210. EX1011, ¶ 111.⁷ Infrared transceiver 240 receives digital pairing data (“*digital data*”) from the in-vehicle system, including a compression mode, user identification, and time synchronization (“*time data*”), and radio transceiver 210 includes a digital receiver, making all received data “*digital data*.” EX1009, ¶¶ 4 (“transmit and receive multiple audio channels in digital form”), 12 (“centralized time-reference of an intelligent information management system may utilize one or more external time-reference sources”), 14 (“two-way digital telemetry information”), 15 (“common characteristics of radio frequency transceivers are required such as support for digital information”; “two-way operation”), 30-32, 36, 39, 41, Figs. 6, 7; EX1013 ¶¶ 3, 6, 11, 13, 14, 16-19, 23, 28, Figs. 6, 7; EX1011, ¶ 111.

d. [1.3] “*at least one audio input port for receiving said locally generated audio from an audio input device, said audio input device wearable by a creator of said locally generated audio*”

Lee discloses element [1.3] as the connector (“audio input port”) in Figure 12, which can be connected to “an optional external lavalier microphone” (“*audio input device*”) that is wearable by the officer or other individual (“*creator of the locally generated audio*”). EX1009, ¶¶ 5, 28 (“microphone is used to collect

⁷ A POSITA would understand that the term “transceiver” refers to a device that includes both a transmitter and receiver. EX1011, ¶ 112.

audio input direct from the user”), 30; EX1013 ¶ 17; *supra* Section V.C.3.b. A POSITA would have understood that the optional use of this microphone is provided by an “audio input port” so that the microphone could be connected when in use and disconnected when not in use. EX1011, ¶ 112. Figure 12 of Lee, below, illustrates a perspective view of the bodypack that shows the external microphone connector (“audio input port”) with a cover, as further shown by Figure 13 of Lee’s provisional. EX1009, ¶¶ 27, 30 (“optional external lavalier microphone”), Fig. 12; EX1013, ¶¶ 17, 45 (“Fig. 13 illustrates a right side view of a BPT of the present invention showing a connector cover that hides a connector for an external remote microphone.” (emphasis added)), Figs. 13, 15; EX1011, ¶ 112.



Fig. 12



Fig. 13

EX1009, Fig. 12 (annotated); EX1013, EX1013, Fig. 13 (annotated).
Fig. 15.

e. [1.4] “at least one memory”

Lee discloses element [1.4] because it discloses that the bodypack includes a memory 250 (“at least one memory”). EX1009, Abstract (“saving recorded audio data to a memory”), ¶¶ 30 (“BPT 110 comprises ... memory 250”), 32 (“memory needed for buffering”), 35 (“memory buffer 250”); EX1013, Abstract, ¶¶ 17, 22, 23; EX1011, ¶ 113.

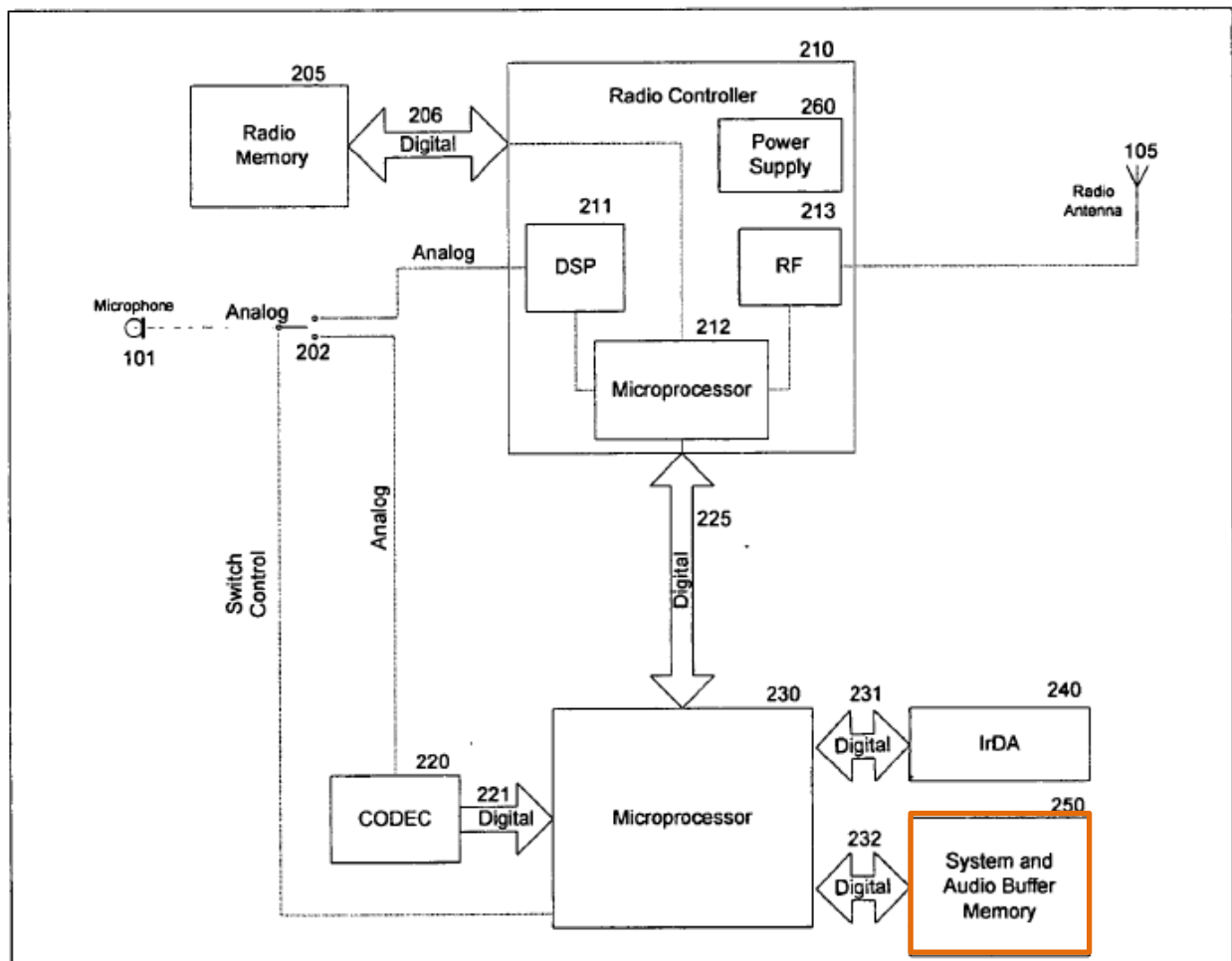


Figure 7: Body Pack Transceiver (BPT) Block Diagram

EX1009, Fig. 7 (annotated); EX1013, Fig. 7; EX1011, ¶ 113.

- f. [1.5] ***“at least one control unit electrically coupled to said local audio device receiver, said audio input device, and said memory for creating local audio data and storing said local audio data in said memory”***

Lee discloses element [1.5] because, as Figure 7 below shows, Lee’s bodypack includes **microprocessor 230** (“control unit”) electrically coupled to **infrared transceiver 240** and **radio transceiver 210** (“local audio device receiver”), the **external lavalier microphone** (“audio input device”) via a connector, and **memory 250** (“memory”). EX1009, ¶ 30, Fig. 7; EX1013, ¶ 17, Fig. 7; EX1011, ¶ 114.

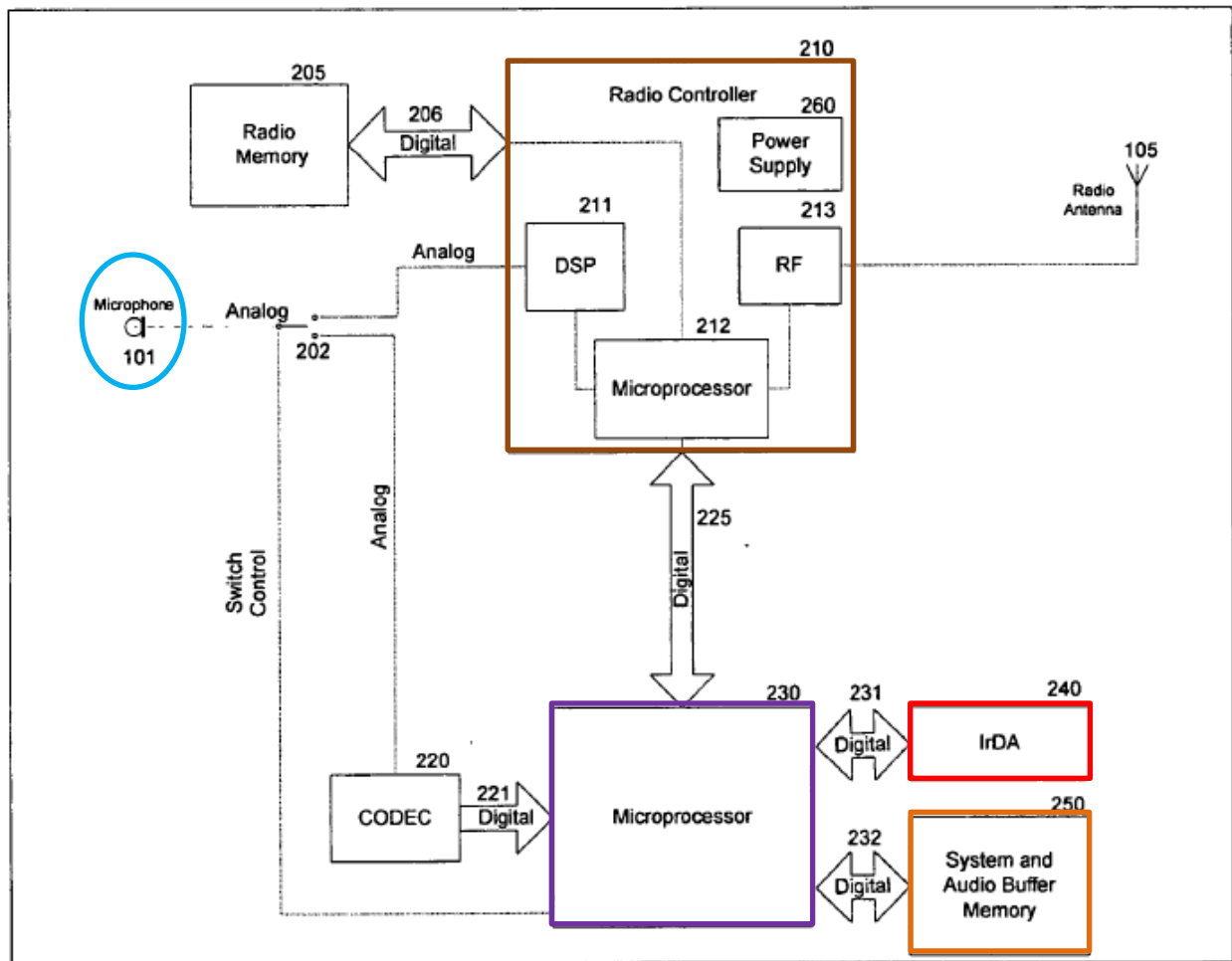


Figure 7: Body Pack Transceiver (BPT) Block Diagram

EX1009, Fig. 7 (annotated); EX1013, Fig. 7, EX1011, ¶ 115. Lee’s bodypack creates local audio data from the locally generated audio, and the bodypack stores the local audio data in memory. EX1009, Abstract (“wireless microphone can operate out of range of the in-vehicle transceiver by saving recorded audio data to a memory”), ¶¶ 32 (“memory needed for buffering”), 34-36 (“memory buffer 250 within the BPT 110”); EX1013, Abstract, ¶¶ 17, 22, 23; EX1011, ¶ 115.

Zaxcom argued that the “*control unit*” may be “in the form of a processor, controller, hardware, software/firmware, and/or other circuitry,” consistent with Lee. EX1015 at 10.

g. [1.6] “*wherein said local audio data may be retrieved after said locally recording and combined with said remotely recorded audio data*”

While element [1.6] does not appear to limit the claimed apparatus, Lee discloses it because the bodypack buffers an “out of range” audio stream (“*local audio data*”), which may be later transmitted or downloaded (“*retrieved after said locally recording*”) to be synchronized and aligned with a “past” video stream on the remote recording system,⁸ i.e., the IVT (“*combined with said remotely recorded audio data*”), just as it is normally done in real-time. EX1009, ¶ 35; EX1013, ¶ 22; EX1011, ¶ 117. Lee explains,

During operation, if the BPT 110 goes into “out of range” mode, the audio stream will automatically be saved into a memory buffer 250 within the BPT 110. Then, when the BPT 110 is no longer in “out of range” mode, the audio stream will be delivered to the mobile digital recording system 210 using the data channel of the wireless radio link and seamlessly recorded with the appropriate video

⁸ The video stream on the remote recording system is a “combined audio/video stream.” EX1009, ¶ 32; EX1013, ¶ 19.

sequence. The BPT 110 is suitably enabled to transmit the buffered “out of range” audio stream while simultaneously streaming live audio in real-time. The live audio stream is applied to the video stream being recorded by the mobile digital recording system as normally done in real time.

Id. Lee further explains:

The wireless microphone is also suitable enabled to store buffered information long-term in the event that the wireless microphone does not return to radio range within a defined period of time. In this case, the buffered information may be downloaded and re-combined with a downloaded video record that was captured by a mobile digital recording system and stored by an information management system on a fixed server.

EX1009, ¶ 9; EX1013, ¶ 8; EX1011, ¶ 117.

Zaxcom argued that element [1.6] is satisfied by a recording unit with the ability to output the local audio data so that it may be retrieved and synchronized with remotely recorded audio, consistent with Lee. EX1015 at 12.

4. Claim 2 “A system according to claim 1, wherein said local audio data includes at least one identifier selected from the group consisting of track identifiers, local audio device identifiers, performer identifiers, and combinations thereof.”

Lee discloses claim 2 because the audio data recorded when the wireless microphone is out-of-range (“*local audio data*”) includes user identification information (“*performer identifiers*”). EX1009, ¶ 36 (“orphaned recording can be identified by the date and time on which it was recorded, but also by other *user identification information*” (emphasis added)); EX1013, ¶ 23; EX1011, ¶ 119. As explained, the user can be a live performer. *Supra* Section V.C.3.b. Lee also discloses that the audio data may include authentication information (“*local audio device identifiers*”) to authenticate the audio source. EX1009, Abstract, ¶¶ 9, 10 (“creating audio watermarks using randomly generated codes”; “codes are used to authenticate the audio source upon playback and/or synchronization”), 40; *id.*, 6 (Claim 11: “creating and recording an Audio Watermark and embedding said Audio Watermark with said recorded audio data stream”); EX1013, Abstract, ¶¶ 8, 9, 27; EX1011, ¶ 119.

5. Claim 3 “wherein said at least one local audio device is at least one bodypack”

Lee discloses claim 3 because it discloses a “wireless digital audio recorder and transceiver body pack (Body Pack Transceiver or BPT)” (“*local audio device*

is at least one bodypack”) that is worn on the user’s body, such as by an officer.

EX1009, ¶¶ 3, 29, 30; EX1013, ¶¶ 2, 16, 17; EX1011, ¶ 120.

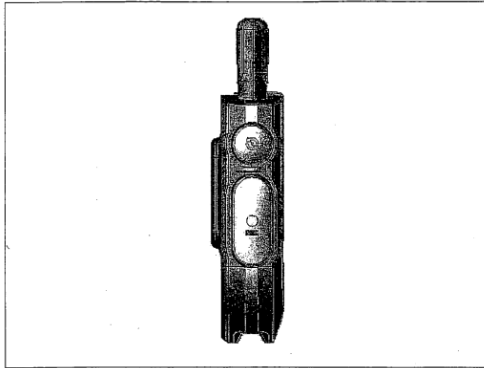


Fig. 11

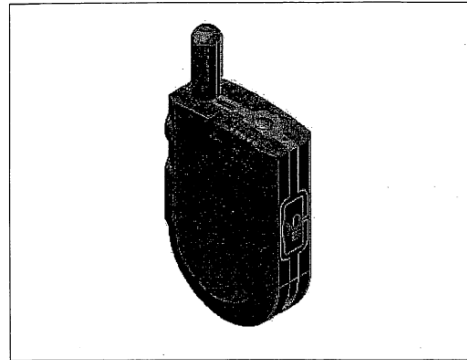


Fig. 12

EX1009, Figs. 11, 12; EX1013, Figs. 10, 15; EX1011, ¶ 120.

6. Claim 4 “*wherein said creator of said locally generated audio is a live performer.*”

Lee discloses claim 4 because it discloses a “wireless digital audio recorder and transceiver body pack (Body Pack Transceiver or BPT)” that is worn on the user’s body, such as an officer (“creator” / “live performer”), to live record the “*locally generated audio*” during an event. *Supra* Section V.C.4; EX1009, ¶¶ 3, 29, Figs. 11, 12; EX1013, ¶¶ 2, 19, Figs. 10, 15; EX1011, ¶ 119.

7. Claim 5 “*wherein said at least one local audio device further includes: At least one audio output port*”

Lee discloses claim 5 because, as explained, Lee discloses wirelessly transmitting local audio from the bodypack for recording by a mobile digital recording system via radio transceiver 210 (“*audio output port*”). *Supra* Section

V.C.3.a; EX1011, ¶ 122. As explained, a POSITA would understand the claimed “*audio output port*” to include a wireless transmitter (*supra* Section V.A.6), like transceiver 210 in Lee (*supra* Section V.C.3.a; EX1011, ¶ 122).

8. Claim 6 “*wherein said locally generated audio is transmitted from said at least one local audio output port directly or indirectly to a remote recorder*”

Lee discloses claim 6 because, as explained, Lee discloses wirelessly transmitting local audio from the bodypack for recording by a mobile digital recording system (“*a remote recorder*”) via radio transceiver 210 (“*audio output port*”). *Supra* Section V.C.7; EX1011, ¶ 123.

9. Claim 7 “*wherein said audio input device is a microphone*”

Lee discloses claim 7 because, as explained, the bodypack may include “an optional external lavalier microphone” (“*audio input device is a microphone*”). *Supra* Section V.C.3.d; EX1009, ¶ 30; EX1013 ¶ 17; EX1011, ¶ 124.

10. Claim 10 “*An apparatus or system according to claim 1 wherein said time data includes at least one of the group consisting of hour data, minute data, second data, and combinations thereof*”

Lee discloses claim 10 because the bodypack may receive, via the infrared transceiver or the radio transceiver, a centralized time-reference of an intelligent information management system that may utilize one or more external time-reference sources such as the Time Service Department of the United States Naval Observatory, the National Institute of Standards and Technology, a GPS signal,

and the like (“*time data includes at least one of the group consisting of hour data, minute data, second data, and combinations thereof*”). *Supra* Section V.C.3.c; EX1009, ¶¶ 12, 39 (“To preserve the real time nature of recorded events, a microprocessor real-time clock in the BPT 110 will be synchronized to the in-vehicle clock of a mobile digital recording system.”), Figs. 6-8; EX1013, ¶¶ 11, 26, Figs. 6-8; EX1011, ¶ 125.

11. Claim 11 “An apparatus or system according to claim 1 wherein said digital data includes setting data for said at least one local audio device”

Lee discloses claim 11 because the bodypack may wirelessly receive digital data containing information to configure the bodypack with the appropriate compression algorithm (“*setting data for said at least one local audio device*”). *Supra* Section V.C.3.c; EX1009, ¶¶ 14 (“two-way *digital* telemetry information” (emphasis added)), 32; EX1013, ¶¶ 6, 18, 19; EX1011, ¶ 126.

12. Claim 12

a. [12.0] “A method of locally recording locally generated audio, said locally generated audio also being wirelessly transmitted to, and remotely recorded by, a remote recorder as remotely recorded audio data”

If the preamble is limiting, Lee discloses it for the same reasons as for the preamble of claim 1. *Supra* Section V.C.3.a; EX1011, ¶ 127. Lee’s body pack buffers and stores locally generated audio and wirelessly transmits that audio in

real-time to a remote mobile digital recording system, which remotely records the audio. *Id.*

b. [12.1] “locally receiving said local audio generated by at least one performer during an audio event”

Lee discloses element [12.1] for the same reasons as elements [1.1] and [1.3] and claim 4. *Supra* Section V.C.3.b, V.C.3.d, V.C.6; EX1011, ¶ 128 Lee’s body pack locally receives local audio generated by a performer wearing the recording unit to make live recordings during an event, such as during “routine traffic stops, arrests, surveillance, and the like (each, an ‘event’).” *Id.*; see EX1009, ¶ 3 (“using a wireless microphone to capture audio information during an event”); EX1013, ¶ 2; EX1011, ¶ 128.

c. [12.2] “transmitting said local audio, directly or indirectly, to at least one of the group consisting of a recorder, a receiver, and combinations thereof;”

Lee discloses element [12.2] for the same reasons as the preamble of claim 1 and claim 6. *Supra* Section V.C.3.a, V.C.8; EX1011, ¶ 129. The radio transceiver in Lee’s body pack transmits the local audio directly or indirectly to the transceiver (“receiver”) of the in-vehicle transceiver (“recorder”). *Id.*

d. [12.3] “locally recording said local audio as local audio data in at least one memory of at least one local audio device wearable by a creator of said local audio”

Lee discloses element [12.3] for the same reasons as elements [1.1], [1.4], and [1.5]. *Supra* Section V.C.3.b, V.C.3.e, V.C.3.f; EX1011, ¶ 130. Lee’s body

pack stores the local audio as local audio data in its memory, and the body pack is wearable by a creator of the local audio. *Id.*

- e. **[12.4] “remotely recording said transmitted local audio via at least one of the group consisting of a recorder, a receiver, and combinations thereof as remotely recorded audio data;”**

Lee discloses element [12.4] for the same reasons as the preamble of claim 1. *Supra* Section V.C.3.a; EX1011, ¶ 131. The in-vehicle transceiver or IVT (“a recorder”), which is remote from the body pack, receives the transmitted local audio and records it. *Id.*

- f. **[12.5] “wherein said local audio data is retrieved during or subsequent to said audio event and is combined with said remotely recorded audio data.”**

Lee discloses element [12.5] for the same reasons as element [1.6]. *Supra* Section V.C.3.g; EX1011, ¶ 132. In Lee’s system, a buffered “out of range” audio stream is transmitted (“local audio data is retrieved during or subsequent to said audio event”) and is synchronized and aligned with a “past” video stream on the remote recording system, i.e., the IVT (“combined with said remotely recorded audio data”). *Id.*

13. Claim 13 “*locally receiving or generating master time data; wherein said master time data includes at least one of the group consisting of hour data, minute data, second data, and combinations thereof*”

Lee discloses claim 13 for the same reasons as claim 10. *Supra*

Section V.C.10; EX1011, ¶ 133. Lee’s body pack locally receives or generates master time data—including hour, minute, and/or second data—for purposes of synchronization. *Id.*

14. Claim 14 “*manipulating said local audio data contained in at least a portion of said memory; wherein said manipulation includes at least one of the group consisting of ... adding a local audio device identifier to at least a portion of said memory, ... adding said performer identifier to at least a portion of said local audio data*”

Lee discloses claim 14 for the same reasons as claim 2. *Supra*

Section V.C.4; EX1011, ¶ 134. Lee’s body pack manipulates the local audio data in memory by adding an identifier that identifies the body pack (“*local audio device identifier*”) and/or the user (“*performer identifier*”). *Id.*

D. Ground 8: Claims 1-14 Are Rendered Obvious over Lee in view of Nagai

As explained, Lee discloses each element of claims 1-7 and 10-14. *Supra* Section V.C3-14. If Zaxcom argues that Lee does not disclose the “*audio input port*” of element [1.3] in claim 1 or the “*audio output port*” in claims 5 and 6, the combined teachings of Lee and Nagai, which discloses such ports, would have rendered these limitations obvious. In addition, Nagai discloses the “*removable*”

memory in claim 8, and the “*memory card*” in claim 9, and in combination with Lee, further renders these limitations obvious.

1. Claim 1, element [1.3] “*at least one audio input port for receiving said locally generated audio from an audio input device, said audio input device wearable by a creator of said locally generated audio*”

Lee discloses each element of claim 1, including element [1.3]. *Supra* Section V.C.3. If Zaxcom argues that Lee does not disclose “*at least one audio input port*” as recited in element [1.3], it would have been obvious to a POSITA to modify Lee’s body pack to include an audio input port in view of Nagai. As explained, Lee at least suggests the use of an audio input port because (1) Lee discloses “an optional external lavalier microphone”; (2) an audio input port was the common, conventional technique for wired microphone communication; and (3) such ports allow different microphones to be detachable and interchangeable, which was beneficial and important for allowing the user to select the best (e.g., comfort, durability, audio quality, etc.) microphone for the recording scenario. *Supra* Section V.A.2.d, V.C.3.d; EX1011, ¶ 136. The ’307 patent recognizes that using a port to connect a microphone was not new—describing its local audio input port as “any commercially available audio input device port.” EX1001, 9:2-8.

As explained, Nagai discloses using a “mike jack”—which includes a conventional and ubiquitous tip-ring-sleeve microphone connector—for

connecting an external microphone (like Lee’s lavalier microphone) to a portable voice recording device to provide the desired customization and detachability.

Supra Section V.A.2.d; EX1011, ¶ 137. It would have been obvious to a POSITA to modify Lee’s body pack to include the conventional mike jack from Nagai—a known technique with predictable results—to provide microphone customization and optional use, as Lee describes. EX1009, ¶ 30; EX1011, ¶ 137.

2. Claim 5 “*wherein said at least one local audio device further includes: At least one audio output port*”

As explained, Lee discloses claim 5. *Supra* Section V.C.7. If Zaxcom argues otherwise, the combined teachings of Lee and Nagai render claim 5 obvious.

EX1011, ¶ 138. As explained, Nagai discloses an “*audio output port*” as a conventional headphone jack. *Supra* Section V.A.6. For the same reasons it was obvious to combine Strub and Nagai, it would have been obvious to a POSITA to integrate a conventional headphone jack into Lee’s body pack. *Id.*; EX1011, ¶ 138. For example, it would have been obvious to a POSITA to have used a headphone jack, like in Nagai, on Lee’s body pack, so that the wearer has the benefit of using any standard headphones to hear what was or is being recorded to confirm operation and check the sound quality. EX1004, ¶¶ 28-31 (discussing a play mode); EX1011, ¶ 138.

Nagai also discloses transmitting audio data using USB and including a conventional USB terminal on the voice recording and reproducing apparatus. *Supra* Section V.A.6; EX1004, ¶¶ 124-26, Fig. 1; EX1011, ¶ 139. A POSITA would have found it obvious to include Nagai's USB port on Lee's body pack as the "*audio output port*" to transmit audio data to the mobile digital recording system ("*remote recorder*"), e.g., to correct the out-of-range loss discussed above. *Supra* Section V.C.3.g; EX1011, ¶ 139. Lee discloses that its mobile digital recording system (or in-vehicle transceiver, IVT) has a USB port. EX1009, ¶ 23, Fig. 8;⁹ EX1013, ¶ 40, Fig. 8; EX1011, ¶ 139. A POSITA would have been motivated to use a conventional USB port—a known technique with predictable results—to improve Lee's body pack, as Nagai teaches, because a USB port uses less power than wireless transmissions, can provide faster file transfers, and allows for creating a backup to any USB-compatible device (including Lee's IVT) in the event that the radio transceiver of the body pack is damaged. EX1011, ¶ 139.

⁹ Figure 8 in Lee is mislabeled as a BPT block diagram, but it is apparent from the figure and the intrinsic record that Figure 8 is "a block diagram of an IVT." EX1009, ¶ 23, Fig. 8; EX013, ¶ 40, Fig. 8.

3. Claim 6 “wherein said locally generated audio is transmitted from said at least one local audio output port directly or indirectly to a remote recorder”

As explained, Lee discloses claim 6. *Supra* Section V.C.8. If Zaxcom argues otherwise, the combined teachings of Lee and Nagai render claim 6 obvious for the reasons explained above for claim 5. *Supra* V.D.2; EX1011, ¶ 140. Nagai discloses both a conventional headphone port and a USB port through which audio is transmitted, and it would have been obvious to use either of those ports in Lee’s bodypack such that the body pack can transmit locally generated audio from the port directly or indirectly to a remote recorder (e.g., a mobile digital recording system). *Id.* Nagai’s headphone port is like “audio device port 328” in the ’307 patent and the “Headphone/Line Output” that Zaxcom argued satisfies this claim. *Supra* Section V.A.6, V.A.7, V.C.D.2; EX1011, ¶ 137.

4. Claim 8 “wherein said at least one memory is removable from said at least one local audio device”

Lee discloses using a memory (*supra* Section V.C.e), but Lee does not expressly disclose the type of memory. Nagai discloses a memory card, which can be removed from the recorder by using an eject button. EX1004, ¶¶ 106, 145, Figs. 1 (memory card 117), 2B (eject button 73). As explained, memory cards were a conventional type of removable, flash memory and commonly implemented in portable recording devices. *Supra* Section V.A.9. It would have been obvious to a

POSITA to use the conventional memory card from Nagai as memory 250 in Lee's body pack—a known technique with predictable results—because a memory card was not only small and light weight but also removable, which would have been desirable because it “enable[s] the recording unit to be used ‘in the field’ for a longer period of time” when out of range because full memory cards can be replaced with new ones. EX1003, 35:21-30; EX1011, ¶ 141.

5. Claim 9 “*wherein said at least one memory is a memory card*”

As explained for claim 8, the combined teachings of Lee and Nagai render claim 9 obvious because it would have been obvious to use a memory card, as Nagai teaches, as the memory in Lee's body pack. *Supra* Section V.D.4; EX1011, ¶ 142.

VI. MANDATORY NOTICES

A. Real Party-in-Interest

Pursuant to 37 C.F.R. § 42.8(b)(1), Lectrosonics, Inc. certifies that Lectrosonics, Inc. is the real party-in-interest.

B. Related Matters

Petitioner is aware of the following cases involving the '307 patent:

Name	Number	District	Filed
Zaxcom, Inc. v. Lectrosonics, Inc.	1-17-cv-03408	NYED	June 6, 2017
Zaxcom, Inc. v. Lectrosonics, Inc.	2-17-cv-02840	NJD	April 25, 2017

C. Lead and Back-Up Counsel and Service Information

C. Brandon Rash (Reg. No. 59,121), available at Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, 901 New York Avenue, NW, Washington, DC 20001-4413 (phone: 202-408-4475) as lead counsel and Cory C. Bell (Reg. No. 75,096), available at Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Two Seaport Lane, Boston, MA 02210-2001 (phone: 617-646-1641) as back-up counsel. Petitioner also appoints Deborah Peacock¹⁰ (Reg. No. 31,649), available at Peacock Law P.C., 201 Third St NW, Ste 1340, Albuquerque, NM 87102 (phone: 505-998-1501) and Justin Muehlmeier (Reg. No. 70,782), available at Peacock Law P.C., 201 Third St NW, Ste 1340, Albuquerque, NM 87102 (phone: 505-998-6117) as additional back-up counsel.

¹⁰ E2E account to be established.

Petitioner consents to e-mail service at Lectrosonics-IPR@finnegan.com,
brandon.rash@finnegan.com, cory.bell@finnegan.com,
DPeacock@peacocklaw.com, and JMuehlmeier@peacocklaw.com.

VII. CERTIFICATION OF GROUNDS

Petitioner certifies pursuant to 37 C.F.R. § 42.104(a) that the '307 Patent is available for IPR and that Petitioner is not barred or estopped from requesting IPR review of the challenged claims on the Grounds herein.

VIII. CONCLUSION

Challenged claims 1-14 are unpatentable, and Petitioner respectfully requests that the Board grant this Petition and institute trial.

Date: April 25, 2018

Respectfully Submitted,

/C. Brandon Rash/

C. Brandon Rash

Reg. No. 59, 121

CERTIFICATION UNDER 37 C.F.R. § 42.24(d)

This Petition complies with the requirements of 37 C.F.R. § 42.24. As calculated by the word count feature of Microsoft Word and manually counted in the figures, it contains 13,842 words, excluding the words contained in the following: Table of Contents, Table of Authorities, List of Exhibits, Mandatory Notices, this Certification Under § 42.24(d), and Certificate of Service.

/C. Brandon Rash/

C. Brandon Rash

Reg. No. 59, 121

Attorney for Petitioner

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing Petition for Inter Partes Review was served on April 25, 2018, by Express Mail at the following address of record for the subject patent. The associated Power of Attorney and Exhibits 1001 through 1019 were served on April 25, 2018.

Rita Chipperson
Chipperson Law Group, P.C.
2 Green Village Road, Suite 301
Madison, NJ 07940¹¹

A courtesy copy of the same documents are also being served on April 25, 2018, by Express Mail at the following address of record for litigation counsel:

Bryan N. DeMatteo
DeMatteo Law, PLLC
830 Third Avenue, 5th Floor
New York, NY 10022

¹¹ Upon review of public record, it appears that the address for the Firm of Chipperson Law Group P.C. has a different mailing address. Thus, the above petition and associated Power of Attorney and exhibits were also served to Rita Chipperson at the following address:

Rita Chipperson
Chipperson Law Group, P.C.
163 Madison Ave, Suite 220-40
Morristown, New Jersey 07960

/Lisa C. Hines/
Lisa C. Hines
Litigation Clerk

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.