

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RØDE MICROPHONES, LLC AND
FREEDMAN ELECTRONICS PTY LTD,

Petitioners

v.

ZAXCOM, INC.,
Patent Owner.

Case IPR2025-00230
U.S. Patent 7,711,443

Case IPR2025-00232
U.S. Patent 10,276,207

DECLARATION OF MR. JAMES M. DEFILIPPIS
IPR2025-00230, Exhibit 2140 (TO SUPERCEDE EXHIBIT 2015)
IPR2025-00232, Exhibit 2058 (TO SUPERCEDE EXHIBIT 2015)

I. INTRODUCTION

1. I, James M. DeFilippis, have been retained as an independent expert in this inter partes review (“IPR”) by the Chipperson Law Group, P.C on behalf of Zaxcom, Inc. (“Zaxcom”) to provide opinions and conclusions regarding the unpatentability grounds asserted by RØDE Microphones, LLC and Freedman Electronics Pty Ltd (collectively “Petitioners”).

2. As discussed in further detail in this declaration (“Declaration”), it is my opinion that the Petitions filed by the Petitioners in cases IPR2025-00230 and IPR2025-00232 (the “Freedman/Rode IPR Petitions”) have failed to prove that any of the challenged claims of U.S. Patent Nos. 7,711,443 (the “’443 Patent”) and 10,276,207 (the “’207 Patent”) (collectively, the “Challenged Patents”) are unpatentable. It is further my opinion that the challenged claims are in fact valid over the cited art.

3. This Declaration, including the accompanying exhibits, sets forth my opinions, conclusions, and other matters regarding the Freedman/Rode IPR Petitions and Patent Owner’s Responses (“Patent Owner’s Responses”) with respect to the ’443 Patent and the ’207 Patent.

II. QUALIFICATIONS

4. I am currently President and CGO of TMS Consulting, Inc., where I have worked since 2012. For TMS Consulting, Inc., I provide insight to

the media and broadcast industry related to new technologies. I am currently active in the development of ATSC 3.0 standards, UHD TV, HDR, file-based workflow, high frame rate capture and production, and next generation audio codecs. I have authored articles in TV Technology discussing impact of new technologies to the TV broadcast industry. I am co-inventor of over 50 patents in the area of multi-primary color displays.

5. Prior to TMS Consulting Inc., I worked for the FOX technology Group from 1997 to 2012 as an Executive Vice President & Principle Engineer for Digital Television Technologies and Standards. I was a senior member of the FOX Technology group responsible for investigating, developing and deploying new technology for the FOX Television Group. I interfaced with senior thought leaders in each business unit to develop an implementation plan for new technologies as well as helped assess the impact to their core businesses. I put together a first-class media laboratory and hired key technologists to provide insights on new media technologies and their impact.

6. I have also worked in the broadcast/media space at various other companies since 1980, as indicated on my curriculum vitae. *See Ex-2016.*

7. I have an extensive background in new technologies for use in the broadcast/media space. My areas of experience include: digital distribution (SVOD, OTT), mobile video, media file-based workflow, MPEG splicing,

digital cable and IPTV standards (SCTE), UHDTV, 4k, HDR, HFR and Wide Color Gamut, Digital Broadcast Standards, live broadcast technology, audio/video production technology, video compression, advanced audio compression, satellite and fiber optic transmission, and media technical standards development. Additional areas of experience and expertise are listed in my curriculum vitae. *See* Ex-2016.

8. I hold two degrees from Columbia University in New York City: (1) a Bachelor of Science degree in Electrical Engineering; and (2) a Master of Science degree in Electrical Engineering. I hold a Professional Engineering License (PE) in New York. *See* Ex-2016.

9. I have achieved Cisco Certifications CCNA Course Part I and Part II and have completed UCLA Extension Courses in Java Programming and Android Programming. I also have an FCC First Class Radio Telephone license. *See* Ex-2016.

10. I am being compensated at the rate of \$350 per hour for my work on this declaration. My fee is not contingent on the outcome of any matter or on any of the technical positions I explain in this declaration.

11. I have no financial interest in Patent Owner or Petitioners.

III. UNDERSTANDING OF LEGAL PRINCIPLES

A. Prior Art

12. It is my understanding that for the claims of a patent to be valid and enforceable, they must be novel and non-obvious in view of any reference or disclosure relevant to the claims of the patent made to the public before the effective filing date of the respective patent application for the invention. It is also my understanding that such references or disclosures made to the public are referred to as “prior art.” It is further my understanding that for a reference to be prior art, it must be enabled and teach one of skill in the art how to make and use the invention without undue experimentation.

B. Analogous Art

13. It is my understanding that a reference is analogous art to the claimed invention only if it: (i) is from the same field of endeavor; or (2) is reasonably pertinent to the problem faced by the inventor. A reference is not "reasonably pertinent" to the problem unless it logically commended itself to an inventor's attention in considering his or her problem.

C. Standard Of Proof

14. It is my understanding that the party asserting unpatentability bears the burden to prove by a preponderance of the evidence that each challenged claim is unpatentable. It is also my understanding that this burden is met when the asserting party sufficiently shows that the assertion is more

probable than not.

D. Person Of Ordinary Skill In The Art

15. It is my understanding that a person of ordinary skill in the art (“POSA”) with regards to the claimed inventions would be an individual having at least a bachelor’s degree in electrical engineering or a related subject and two to five years of experience working with multi-track audio and wireless communications systems in the professional performance industry. However, additional years of education in the above-referenced fields may compensate for fewer years of experience, and vice versa.

16. It is my opinion that I would have qualified as a POSA at the time of the filing and prosecution of the Challenged Patents. *See* Ex-2016. I further believe that I have an acceptable level of experience, education, and knowledge to act as an expert in the art of the Challenged Patents.

17. My opinions are based on the perspective of a POSA at the time of the filing and prosecution of the Challenged Patents, or somewhat before such a time, consistent with *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). I was asked to consider the type of problems encountered in the art, prior solutions available for such problems, how quickly innovations are made, the sophistication of the technology, and the educational level of active professionals in the field. Under that context, my opinions as disclosed in this

Declaration are based on the materials I have reviewed and considered, as discussed below. *See infra* § IV.

E. Claim Construction

18. It is my understanding that, absent of extenuating circumstances, patent claims are to be interpreted according to their ordinary and customary meaning, as would have been understood by a POSA and the prosecution history pertaining to the patent. It is also my understanding that sources, including, but not limited to, the words of the claims themselves, the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art, are to be used to determine what would be understood by a POSA.

F. Anticipation

19. Although not alleged in the Freedman/Rode IPR Petitions, it is my understanding that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. It is also my understanding that the identical invention must be shown in as complete detail as is contained in the claim and that there must be no difference between the claimed invention and the reference disclosure, as viewed by a POSA. It is also my understanding that for a claim to

be anticipated, a single reference must identify all claim elements in the same way it is in the claim.

G. Written Description Requirement

20. It is my understanding that when a disclosure describes a claimed invention in a manner that permits a POSA to reasonably conclude that the inventor possessed the claimed invention, the written description requirement is satisfied. It is also my understanding that to satisfy the written description requirement, all that is required is reasonable clarity. It is my understanding that an adequate description may be made in any way, through express, implicit, or even inherent disclosures in the application, including words, structures, figures, diagrams, and/or formulae.

H. Obviousness

21. It is my understanding that the question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; and (3) the level of skill in the art. It is also my understanding that a petitioner seeking to invalidate a patent as obvious must demonstrate that a POSA would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the POSA would have had a reasonable expectation of success in doing so. It is my

understanding that the evidence presented in the Petition must also address every element of every challenged claim. It is also my understanding that the Board has previously warned that failure to identify differences between the cited art and the claims is a basis for denying a petition.

IV. MATERIALS REVIEWED AND CONSIDERED

22. My opinions contained in this declaration are based on information including: (i) the documents and other evidence I have reviewed, including the Freedman/Rode IPR Petitions and all associated exhibits; (ii) Patent Owner's Responses and all associated exhibits; (iii) other materials noted in this Declaration; and (iv) my own education, training, experience and knowledge. I may rely on any of these materials, experiences, and knowledge, in addition to the evidence specifically cited as supportive examples in particular sections of this Declaration, as additional support for my opinions.

23. I understand that the '902 Patent, '814 Patent, and U.S. Patent No. 9,336,307, which issued May 10, 2016 (the "'307 Patent"), were previously involved in the following IPRs filed by third party, Lectrosonics, Inc., respectively: *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129 (the "Prior '902 IPR"); *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01130 the "Prior '814 IPR"); and *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-00972 the "Prior '307

IPR”) (collectively, the “Lectrosonics IPRs”).

24. I may also provide testimony: (i) in rebuttal to Petitioners’ positions, including opinions of any of Petitioners’ experts and materials they discuss or rely upon; (ii) based on any Orders from the Board; (iii) based on documents or other discovery that Petitioners have not yet produced or that were produced too late to be considered before my Declaration was due; or (iv) based on witness testimony which has not been given or was given too late to be considered before my Declaration was due. I reserve the right to supplement or amend my opinions as further documentation and information is received.

25. I reserve the right to supplement or amend this Declaration if additional facts and information that affect my opinions become available.

V. BACKGROUND

A. Prior Art Audio Systems

26. It is my understanding that prior art audio systems for the recordation of performance audio included the use of a multi-track audio recorder manually connected to audio input devices, such as microphones. *See* Ex-1001, 1:34-35. In these systems, each performer on a sound stage would be recorded by one or more microphones that are directly wired to the multi-track recorder, which would then combine the single track of audio received from

each microphone to create one multi-track audio file. *See id.* at 1:36-40.

27. It is also my understanding that other prior art systems could include a multi-track audio recorder and an associated audio receiver that could receive audio wirelessly from one or more wireless transmitters. *See id.* at 1:49-51. The audio receiver would receive each performer's audio from the performer's respective body pack via an analog or digital wireless transmission, which would be transmitted to the audio recorder. *See id.* at 1:53-56. All wireless transmissions received from all body packs would then be combined to create one multi-track audio file. *See id.* at 1: 56-58.

28. These prior art systems had problems with wireless transmission errors, such as dropouts, which would result in defective and interrupted audio recordings. *See id.* at 1:59-60. While these prior art systems used redundant receivers to reduce the likelihood of missed audio transmissions, it was ineffective in preventing the loss of data due to a distortion of the received audio signal due to receipt of multiple wireless signals, also known as an interference. *See id.* at 2:1-3. If an interference were to occur during a live performance, audio created during such a performance would be lost, as the receiver would be prevented from receiving a clean audio signal. *See id.* at 2:3-6.

VI. RESERVED

29 – 130. [Reserved]

VII. THE SPECIFIC GROUNDS FOR INVALIDITY REGARDING THE '443 PATENT

A. Claim Construction

1. “locally generated audio” (Claims 1-4, 7-9, 15, 17, 19-20, 22-27).

131. I have reviewed the claim constructions proposed by Patent Owner in its Patent Owner Responses and agree with them. I agree that a POSA would understand that the claim element “locally generated audio” as recited in Claims 1-4, 7-9, 15, 17, 19-20, and 22-27, means “separate, isolated audio created by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio,” and “audio data” means “mono or stereo audio files created from independent, isolated locally generated audio, such files suitable for creation of a multi-track audio file.”

132. The '443 Specification is entitled “Virtual Wireless **Multitrack** Recording System” (emphasis added), and it is my understanding that the multitrack capabilities described therein are described throughout the '443 Specification. *See* Ex-1001, Abstract (“Disclosed are systems and methods for wirelessly recording multi-track audio files without the data corruption or loss of data that typically occurs with wireless data transmission.”).

133. It is my understanding that multitrack recording is a technique that captures multiple audio sources (i.e., the voices of individual performers) independently onto separate tracks instead of mixing them together in real time, thereby allowing audio engineers to independently edit each track during and after recording. This understanding is consistent with the following definition: “[a] multitrack recording consists of multiple, separate streams of sound without defined locations in a sound field. During a typical music-recording session, **individual instruments or voices will be recorded on separate tracks.**” *See* Ex-2014, pg. 1 (Federal Agencies Digital Guidelines Initiative, Glossary) (emphasis added).

134. It is my opinion that when read in the context of the ’443 Specification, which specifically requires a multitrack recording system, and in the context of the claim language, it is clear that the element “locally generated audio” as recited in Claims 1-4, 7-9, 15, 17, 19-20, and 22-27, means “separate, isolated audio created by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio,” and “audio data” means “mono or stereo audio files created from independent, isolated locally generated audio, such files suitable for creation of a multi-track audio file” as these definitions enable each performer to create an

individual audio track to be used and independently edited in the resulting multitrack recording. It is my opinion that a single track of audio that includes all ambient or scratch audio generated by all individuals and/or audio sources being recorded is improper because multitrack recording requires at least two discrete, independent audio tracks, typically one audio track per audio source (e.g., a performer) and anything less would be inconsistent as a whole to the '443 Specification, which describes:

(i) “[S]ystems and methods for wirelessly recording **multi-track** audio files ... each performer is equipped with a local audio device capable of locally recording **the respective performer's audio**”

(Ex-1001, Abstract);

(ii) “[P]erformers may each don a local audio device ... audio from multiple local audio devices may be transmitted to a **multi-track** recorder for recording of the audio event while each local audio device locally records **its performer's audio**” (Ex-1001, 12:27-28, 13:18-21); and

(iii) “[A]udio received from each of the local audio devices (e.g., **the local audio device of each performer**) may be combined to create one or more **multi-track** audio files,” (Ex 1001, 15:19-21) (emphasis added).

135. It is also my opinion that the language of Claims 1-4, 7-9, 15, 17, 19-20, and 22-27 also support this definition by requiring “at least one local audio device wearable by a creator of said locally generated audio.” Ex-1001, 21:56-57. In other words, the locally generated audio is created by the person wearing the local audio device. Likewise, Claim 15 requires “creating local audio data from said locally generated audio ... wherein said local audio data is combined electronically to create a single **multi-track** data file.” Ex-1001, 21:65-66, 23:33-35 (emphasis added). As such, it is my opinion that the creation of a multi-track file can only happen when independent, isolated, separate tracks of each of the performer’s voices exist.

136. As such, it is my opinion that the locally generated audio is the isolated, separate audio of the performer wearing the local audio device through the use of the “at least one audio input port for receiving locally generated audio from an audio input device” that is typically close miked to the performer to capture only, or primarily, the audio of the performer wearing the local audio device so that this audio may be its own independent track of the multi-track audio file.

2. “local audio device wearable by a creator of said locally generated audio” (Claims 1-4, 7-9, 15, 17, 19-20, 22-27).

137. I agree that a POSA would understand the claim element “local

audio device wearable by a creator of said locally generated audio,” as recited in Claims 1-4, 7-9, 15, 17, 19-20, and 22-27, means “a local audio device suitable to be worn by the performer who creates the audio that is recorded by that performer’s local audio device.” It is my opinion that a POSA at the time of the invention reading this claim term would understand that this definition must be consistent with the purpose of the ’443 Patent, which is a “[v]irtual wireless **multitrack** recording system.” Ex-1001, Title (emphasis added). A POSA would understand that any claim construction inconsistent with multitracking is inconsistent with the ’443 Specification as a whole.

138. While the ’443 Specification does not explicitly state the term, “wearable,” the ’443 Specification nevertheless supports this definition by using similar terms to describe. For example, the ’443 Specification states that local audio devices “are worn by the performers of the audio event.” Ex-1001, 9:23. Further, the ’443 Specification states, “[d]isclosed are systems and methods for wirelessly recording multi-track audio files ... each performer is equipped with a local audio device capable of locally recording the respective performer's audio.” Ex-1001, Abstract. The ’443 Specification also states, “allowing a wireless recorder 108 ... to accurately combine multiple independent tracks of audio, wherein each independent track of audio is received from one of the

performer's local audio device 102.” Ex-1001, 10:29-34.

139. Claims 1-4, 7-9, 15, 17, 19-20, and 22-27 also require the local audio device to include “at least one audio input port for receiving locally generated audio from an audio input device,” where the audio input device is, for example, a microphone, and that the audio input device port is any commercially available audio input device port that is compatible with the audio input device. Ex-1001, 21:60-61, 7:65-8:4, 8:59-62 (“[L]ocal control unit 310 receives recordable audio from local audio input device 312, which may be worn by the performer and connects to local audio device 102.”). That is, the performer is equipped with a microphone which connects to an input port of the performer’s local audio device to allow it to capture the audio of the specific performer wearing the local audio device. In view of such disclosures, it is my opinion that the ‘443 Specification supports this definition of the claim elements.

140. Furthermore, my review of the prosecution history of the ‘443 Patent makes it clear that “wearable” means “suitable to be worn by the performer” and excludes devices that are merely portable or able to be carried in a backpack. In the ‘443 Patent’s Notice of Allowance, Examiner Elbin included a statement of reasons for allowance that distinguished between “portable” and

“wearable”: “the closest prior art of record (Nagra-V) teaches a portable audio recorder ... The prior art fails to teach or suggest ... wherein the device is ‘wearable by a creator of said locally generated audio.’” Ex-2017, pg. 2. The Nagra-V is portable, having dimensions of 11.4” x 8.6” x 4.5” with a weight of approximately 7.6 to 9 pounds, and sold with a soft carrying case NV-SCC. See Ex-2018, pg. 2. As such, it is my opinion that while the Nagra-V is fully capable of being carried in a backpack, the Examiner understood that the Nagra-V is not “wearable.”

3. “multi-track data file” (Claim 15).

141. I agree that a POSA would understand the claim element “multi-track data file” means “a data file consisting of multiple, separate streams of sound with individual instruments or voices recorded on separate tracks,” at the time of the filing of the ’443 Patent. A POSA would have known at the time of filing of the ’443 Patent that such a data file is a multitrack recording that “consists of multiple, separate streams of sound . . . [and] individual instruments or voices will be recorded on separate tracks.” Ex-2014, pg. 1

142. It is my opinion that the plain language of the ’443 Specification supports this definition, which explains that “[t]he audio received **from each of the local audio devices** (e.g., the local audio device **of each performer**) may

be **combined to create one or more multi-track audio files.**” Ex-1001, 15:18-21 (emphasis added). “[A]udio from multiple local audio devices may be transmitted to a **multi-track** recorder for recording of the audio event while each local audio device locally records **its performer’s audio.**” Ex-1001, 13:18-21 (emphasis added). That is, the locally generated audio created by each performer and locally recorded by each respective local audio device is subsequently combined to create an audio file consisting of multiple, separate streams of sound as recorded by each local audio device of each performer.

143. It is also my opinion that the language of Claims 1 and 15 further supports this definition: “at least one local audio device **wearable by a creator of said locally generated audio** ... creating local audio data from said locally generated audio ... said local audio data is **combined electronically to create a single multi-track data file,**” wherein the “said local audio data” is “from said locally generated audio” of the “at least one local audio device **wearable by a creator** of said locally generated audio.” Ex-1001, 21:56-57 (emphasis added), 21:65-66, 23:33-35 (emphasis added). In other words, the locally generated audio created by each performer and locally recorded by the performer’s local audio device is combined to create a multitrack audio file consisting of multiple, separate streams of sound from the local audio device of each performer.

144. It is my understanding that a POSA would have understood this claim construction of “multi-track data file” is consistent with the multi-track purposes of the ’443 Specification and that any construction inconsistent with multitrack recording is inconsistent with the ’443 Specification.

145. [Reserved]

146. [Reserved]

147. [Reserved]

148. [Reserved]

**4. “master timecode generator” and “master timecodes”
(Claims 1-4, 7-9, 15, 17, 19-20, 22-27).**

149. I agree that a POSA would understand the claim elements “master timecode generator” and “master timecodes,” as recited in Claims 1-4, 7-9, 15, 17, 19-20, and 22-27 to mean “a producer of a master time reference signal that controls at least one other timecode generator” and “a time reference signal used to synchronize at least one device,” respectively.

150. It is my opinion that this proposed construction is consistent with the meaning of the claim element itself. The claim term “master” means “[one] that has control over another or others.” Ex-2019, pg. 3 (The American Heritage

Dictionary, Third Edition, Houghton Mifflin Company, 1993). Additionally, the plain meaning of these claim elements is confirmed by the '443 Specification. For example, Figure 5 of the '443 Specification discloses modifying the speed of a local timecode generator as necessary to maintain its synchronization with a master timecode generator. Ex-1001, Fig. 5, 2:58-61. The end of the description of Figure 5's process in the '443 Specification also states "[i]n this manner, the speed of the local timecode generator and the sample rate of the ADC are increased to maintain synchronization with the master timecode generator." Ex-1001, 13:66-14:2. Figure 6 describes the master timecode generator's use of a master timecode, or time reference signal used to synchronize at least one device: "[a]t 604, a master unit ... transmits master timecodes to each local audio device, and ... each local audio device synchronizes (e.g., jam syncs) its respective on board local timecode generator with the master timecodes received from the master unit, thereby synchronizing all local audio device timecode generators with the master timecode generator." Ex-1001, 15:4-11. In other words, the master timecode generator creates master timecodes that are used to control the speed of the local timecode generator to ensure the two timecode generators are synchronized. The '443 Specification further explains that the master timecodes synchronize the audio data recorded at various components of a recording system:

(i)“Since the local audio device and recorder timestamps are synchronized, the replayed audio may be inserted in the proper time sequence with respect to the other recorded audio samples based upon the synchronized timestamp data. Synchronization is essential to ensure that each performer's audio is synchronized with all other performers’ audio and to ensure that the newly recorded replayed audio is in the correct sequence with respect to the previously recorded live audio,” (Ex-1001:4:25-32);

(ii) “When recording system 100 is operating in a synchronous mode, transmission of the master time reference signal ensures that all of the components of recording system 100 store all locally recorded audio with timestamps that are highly accurate as compared to the timestamps of all other local audio devices 102 and/or all other components of recording system 100. The timestamps are then used ... to ensure that the replayed audio from all local audio devices 102 is synchronized with previously recorded audio and with the audio replayed by all other local audio devices 102,” (Ex-1001, 5:42-52,);

(vi) “[A] portion of the received data may be used to synchronize

local timecode generator 304 to the master time code generator integral to one of the components of recording system 100 (e.g., RCU 104, recorder 108, etc.,” (Ex-1001, 9:40-43);

(v) “At 410, the local control unit reads the master timecode contained in the RX buffer and jam synchronizes the local timecode generator with the master timecode. The jam sync synchronizes the local audio device with the RCU while allowing the local audio device to supply its own timecode. Local supply of synchronized timecodes ensures proper timing during periods in which the master timecodes cannot be read,” (Ex-1001, 12:55-63); and

(vi) “At 604, a master unit ... transmits master timecodes to each local audio device, and ... each local audio device synchronizes (e.g., jam syncs) its respective on board local timecode generator with the master timecodes received from the master unit, thereby synchronizing all local audio device timecode generators with the master timecode generator,” (Ex-1001, 15:4-11).

Accordingly, the language of both the claims and the ’443 Specification support Zaxcom’s proposed construction.

5. “body pack” (Claim 19).

151. I agree that a POSA would understand “body pack,” as recited in Claim 19, to mean “a small box housing a transmitter capable of being worn on a belt or in a pocket.” This proposed construction is consistent with the industry standard and the language of the ’443 Specification. Within the industry, a “body pack” is described as “a transmitter you can wear on a belt clip or in your pocket.” Ex-2020, pg. 5. Also, “[t]ransmitters and antennas are built into wireless microphones, either within the handheld unit or within the bodypack.” *Id.* at 14. In other words, it would be understood by a POSA that body packs in the industry of recording performances are devices that house a transmitter that are capable of being worn on a belt or in a pocket, such as those typically worn by news announcers, performers, and the like. Any other construction, such as one in which the bodypack is too large to be worn on a belt or put in a pocket, is inconsistent with the ’443 Specification.

152. The ’443 Specification also explains that the local audio devices of the ’443 Specification house a transmitter. For example, the ’443 Specification explains that “wireless **transmitters** may take the form of body packs that are worn by each performer.” Ex-1001, 1:40-42 (emphasis added). Additionally, the local audio devices of the ’443 Specification are described as

“digital, wireless audio **transceivers**. Such audio devices may be manufactured in the form of body-packs, such as those typically worn by news announcers, performers, and the like.” Ex-1001, 7:46-52 (emphasis added). The ’443 Specification also discloses that “[l]ocal audio devices 102 may be bodypacks such as the local audio device 102 depicted in FIG. 3B.” Ex-1001, 10:52-53.

153. Furthermore, it is my opinion that the local audio device 102 “housing a transmitter capable of being worn on a belt or in a pocket” should be understood to be a “small box,” as depicted in Figures 1 and 3B of the ’443 Specification, whereby the body pack of Claim 19 is depicted as “a small box.” *See* Ex-1001, Figs. 1 and 3B (depicting local audio devices 102 as small boxes). A POSA would understand that a “body pack” is a “small box housing a transmitter capable of being worn on a belt or in a pocket.” Industry publications support this definition (Ex-2020, pp. 5, 14) as well as the prior art at the time of filing of the ’443 Patent (e.g., Ex-2025).

B. Petitioners Did Not Show That Any of the Challenged Claims of the ’443 Patent Would Have Been Obvious.

154. It is my opinion that none of the challenged claims of the ’443 Patent would have been obvious with respect to any of the proposed grounds of rejection set forth by Petitioners for at least the reasons set for below.

1. Petitioners Do Not Demonstrate That a Combination of Strub, Woo, Nagai, Gleissner, Winningstad, and Dwyer Teaches Element 1[Pre] or Element 1[F] (Claims 1-4, 7-9, 15, 17, 19-20, 22-27).

155. It is my opinion that the combination of Strub, Woo, Nagai, Gleissner, Winningstad, and Dwyer does not teach Element 1[Pre], namely “[a] system for recording locally generated audio” and Element 1[F], namely, “at least one control unit in communication with said local audio device receiver, said audio input device, and said memory for creating local audio data from said locally generated audio and storing said local audio data in said memory.” Although Petitioners argue that these elements are taught by both Strub and Woo, Petitioners propose no definition of “locally generated audio.” Petition, pp. 33-37, 47-49.

156. As previously discussed, “locally generated audio,” is “audio created by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio,” as is required for the creation of a multitrack recording and the incorporation of such “locally generated audio” therein as described in the ’443 Specification. *See supra* § VII.A.1. The locally generated audio is the audio created by the performer who is wearing, and therefore is equipped, with the local audio device. The ’443 Specification teaches “at least one audio input port for

receiving locally generated audio from an audio input device,” where the audio input device (e.g., a microphone) is typically close miked and worn by the performer. The audio input device is connected to the performer’s local audio device to capture only, or primarily, the audio created by the performer wearing the local audio device so that this audio may be its own independent track. This enables the combining of individual, isolated tracks of audio with the tracks of other performers’ audio to create a multi-track audio file. Ex-1001, Abstract, 12:27-27, 13:18-21, 15:19-21.

157. It is my opinion that Strub and Woo teach the exact opposite of “locally generated audio,” as the audio of Strub and Woo is locally “received” or “heard” by a recorder (i.e., the person in Strub who records the audio). This is not audio generated, or created, by the recorder. For example, Strub at 22:16-33 describes the recordation of sound to be for sound coming from in front of the recorder. *See* Ex-1003, 22:16-33. Similarly, Woo at 5:3-5 describes the recordation of sound of a performance from multiple vantage points. Ex-1004, 5:3-5. In other words, the audio recorded by Strub’s recording units 105-108, 200, and 300, and Woo’s recorders 14 is the sound *heard* by the recorder 14. This recorded sound is a single track of audio that does not include individual, isolated tracks of audio per performer or audio source (e.g., speakers or

performers). This received, “heard” audio is not suitable for multi-track recording because it does not include individual, isolated tracks of audio for each performer that can be independently edited.

158. Strub’s specification details the receipt of a single track of combined audio, representing the audio of an event as a whole, by a recorder, rather than generation of audio by a specific performer that is recorded on their own dedicated track:

- (i) “[I]t is believed preferable to bias the audio recording in favor of recording sound from in front of the recorder for several reasons: i) a person or persons with whom a recorder is having a conversation will typically be in front of the recorder; ii) a recorder will typically face the parties participating in a conversation that does not include, but is of interest to, the recorder; iii) a recorder will often face the source of other sounds in which the recorder has an interest; and iv) conversations that occur behind a recorder are typically either conversations which the recorder does not want to hear or are conversations which the parties to the conversation may not intend the recorder to hear,” (Ex-1003, 22:21-32);
- (ii) “Mounting at or just above chest level also enables the audio

data acquisition device to pick up spatial imaging of the audio that is similar to that which is experienced by the recorder's ears,” (Ex-1003, 22:59-63); and

(iii) “[U]se of a directional microphone ... has been found to enhance the ability to record the voices of other people, particularly when those people are relatively distant from the recorder,” (Ex-1003, 23:8-11).

159. The recording device of Woo is not worn by the person who is creating the audio that is to be recorded (i.e., the performer). Instead, Woo’s recorder (e.g., recorders 14 and 16) obtains recordings of the audio generated by the performer from independent vantage points: “[s]ystem 10 is used to record the live performance of a performer 12 ... recorder 14 captures the performance from its vantage point while another recorder 16 independently captures the same performance from its own vantage point.” Ex-1004, 5:1-5. In view of the aforementioned, a POSA would understand that Woo does not teach “locally generated audio” because Woo’s audio is not “created by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio.” Instead, recorder 14 is not the one who is generating the audio. Recorder 14 is wearing the purported local audio device,

but is recording the audio generated by another entity (i.e., performer 12).

160. The single tracks of audio received by a Strub or Woo recorder cannot be used for multitrack recording, as required by the '443 Specification, as such tracks of audio do not include individual, isolated tracks of audio per performer/audio source (e.g., speakers or performers) and therefore do not record each performer on an individual, dedicated audio track.

161. As such, it is my opinion that neither Strub nor Woo discloses creating independent tracks of performer audio, multi-track recording, or creating a multi-track audio file. Because neither Strub nor Woo disclose Elements 1[Pre] or 1[F], and Petitioners do not assert that these elements are shown by Nagai, Gleissner, Winningstad, or Dwyer, Petitioners have failed to show that there is a reasonable likelihood that at least one of Claims 1-4, 7-9, 15, 17, 19-20, and 22-27 of the '443 Patent is unpatentable.

2. Petitioners Fail to Demonstrate That a Combination of Strub, Woo, Nagai, Gleissner, Winningstad, and Dwyer Teaches Element 1[B] (Claims 1-4, 7-9, 15, 17, 19-20, 22-27).

162. It is my opinion that Petitioners fail to state any proof in support of their assertion that a Strub recording unit having the features of the challenged claims of the '443 Patent, which include a receiver and a transmitter, is wearable. See Ex-1001, 21:56-59, 22:1-2.

163. Strub discloses many variations of recording units – some with basic recording capabilities (the “Basic Strub Recording Unit”) and some with recording and transmitter/receiver capabilities (the “Advanced Strub Recording Unit”). Strub’s recording units 105-108 are only described as Basic Strub Recording Units without any mention of an ability to transmit or receive data. Ex-1003, 8:13-29 (“Each of the recording units 105, 106, 107 and 108, in accordance with the invention, enables the corresponding participant (recorder) to obtain a recording of the event in a manner that does not interfere with participation in, or observation of, the event, either by the recorder or other participants. (Generally, a "recorder" is any person having the capability of controlling a recording unit according to the invention.) Additionally, in the use of the invention shown in FIG. 1, since there are multiple recorders, the event can be simultaneously recorded from multiple points of view. Further, the invention enables the above-described recording from points of view that are "in" the event, since the recording is done by participants in the event. Thus, the invention can enable first person recording from multiple points of view simultaneously, while minimizing or eliminating the effect of the act of recording upon the conduct of the event.”). Strub’s recording unit 200 is also a Basic Strub Recording Unit as it only includes system controller 201, data acquisition device 202, data storage device 203, and control interface device

204, Strub is absent of any disclosure that recording unit 200 includes a transmitter or receiver. Ex-1003, Fig. 2. Conversely, Strub's recording unit 300 is an Advanced Strub Recording Unit that specifically includes a transmitter 309 and receiver 310, and data acquisition is performed via two devices (video data acquisition device 302 and audio data acquisition device 303) instead of the one data acquisition device used in the Basic Strub Recording Unit 200. Ex-1003, 11:48-50, 12:13-16.

164. Petitioners equate the local audio device of Claims 1-4, 7-9, 15, 17, 19-20, and 22-27 to Strub's recording unit 300, likely because it includes a receiver, as required of Claims 1-4, 7-9, 15, 17, 19-20, and 22-27. Petition, pp. 38-39; Ex-1001, 21:58. However, Petitioners only refer to Fig. 1 to prove wearability of Element 1[B], i.e., "Strub discloses at least one audio device—*e.g.*, one of recording units 105-108, **200, and 300**, which are worn by a plurality of creators of locally generated audio—*e.g.*, people conversing at an event—as depicted in **Figure. 1.**" Petition, pg. 38 (emphasis added). Upon a plain viewing of Figure 1 of Strub, this statement is clearly incorrect as the only recording units shown in Fig. 1 are recording units 105-108. It is clear that recording units 200 and 300 are not shown in Fig. 1. Additionally, Petitioners have again made no showing that recording units 105-108 include a receiver.

Ex-1003, 8:10-29.

165. It is my opinion that the citations on page 39 of the Petition actually proves that the Strub device is not wearable. For example, Strub at 4:21-31 refers to a Basic Strub Recording Unit and does not mention an integral receiver. Furthermore, Strub at 14:59-15:11 and 16:66-17:24 discuss the wearability of the visual acquisition device. These citations do not reference the recording unit as a whole, which actually proves that the visual acquisition device portion of a Strub recording unit is not wearable. This is illustrated by the Strub specification because the visual acquisition device portion of the Strub recording unit must be attached to a “wearable apparatus” such as a “helmet, headband, or head harness ... that is worn by the recorder” or “mating VelcroTM strips ... can be used to attach the visual data acquisition device ... on headgear, and armband, a legband, or other wearable apparatus.” Ex-1003, 17:1, 7-24. In other words, while the “wearable apparatus” is wearable, the visual data acquisition device is not, hence the need to attach it to a “wearable apparatus,” such as the examples described by Strub. Additionally, Strub at 38:65-39:11 does not pertain to the wearability of the recording unit as a whole, rather, it only pertains to the wearability of an “audio communication device,” – not a recording unit. Furthermore, Strub at 66:33-51 does not describe wearability of

a recording unit with a receiver because it describes a “data acquisition device” which is the acquisition device used in the Basic Strub Recording Unit, thereby failing to disclose a recording unit which includes a receiver or transmitter. Ex-1003, Figs. 2 and 3, 66:33-51. Strub at 66:33-51 makes clear that even this Basic Strub Recording Unit without a receiver may not be wearable, as Strub states that “it is desirable to ‘package’ the recording unit components in any manner that achieves some or all of the desired characteristics of a recording unit according to the invention, e.g., small size, low weight, unobtrusiveness, and capability of being mounted on a recorder (**or, at least, capability of being easily carried by the recorder**).” Ex-1003, 66:27-32 (emphasis added). Even the Strub specification questions whether a Basic Strub Recording Unit without a receiver or transmitter is actually wearable and certainly does not address wearability when additional components are added thereto (e.g., a receiver and transmitter). Strub at 67:54-68:10 and 72:9-19 again refer to the wearability of a Basic Strub Recording Unit 700 with no receiver. Ex-1003, 68:11-14 (“As illustrated in FIG.7, the recording unit 700 includes three physically separate components: a data acquisition unit 701, a control interface unit 702, and a data storage and system control unit 703.”). Accordingly, it is my opinion that Petitioners have failed to plead any facts to show that the cited references, or any combinations thereof, disclose a wearable device having all of the features

required by the challenged claims of the '443 Patent.

166. Strub's recording unit is not wearable, rather, it's portable. If Strub's recording unit was "wearable," it would not require a backpack to attach it to a recorder's body. Ex-1003, 67:30-33, 45-47 ("Fig. 6 illustrates a recording unit . . . Most of the components of the recording unit are enclosed within a backpack 601" and "a recording unit as shown in Fig. 6 . . . weighs about 24 pounds."). The Strub recording unit is not worn – it is carried within a backpack. One might send a child to school with a sandwich in the child's backpack – this does not make the sandwich wearable. A proper claim construction of Element 1[B] excludes portable devices. *See supra* § VII.A.2.

167. Strub also fails to disclose a local audio device that is "suitable to be worn by a performer," as required by a proper construction of Element 1[B]. *Supra* § VII.A.2. The '443 Patent discloses a recording system that "wirelessly records audio events such as performances, movie takes, etc.," and the local audio devices are "are worn by the performers of the audio event." Ex-1001, 3:30-32, 9:22. In contrast, Strub's "local audio devices" are not "suitable to be worn by a performer," as the Strub recording unit is much too large, visible, heavy, and imposing to be worn during the filming of performances.

168. The use of the Strub recording unit for "social recording" and to

“facilitate later reminiscence,” as described in does not require the same portability and discreteness as a device used to record audio events in a professional context, such as performances or movie takes. Ex-1003, Abstract; Ex-1001, 3:30-32 (“Recording system 100 wirelessly records audio events, such as **performances, movie takes**, etc. having one or more **performers**.”) (emphasis added). This professional context as disclosed in the ’443 Patent requires such local audio devices to be of a size, weight, and shape that can be worn by performers without distracting the audience from the visual performance of the audio events. The weight, size, and shape of the Strub recording unit prohibits such application. Figure 6 of Strub teaches a “recording unit [that] weighs about 24 pounds,” and it is a recording unit without a receiver, contrary to the requirements of the challenged claims of the ’443 Patent. Ex-1003, 67:45-47; Ex-1001, 21:58. As such, it is my opinion that a Strub recording unit having all of the features of the challenged claims of the ’443 Patent will exceed 24 pounds. Carrying a backup in excess of 24 pounds is not suitable for recreational filming as it is too heavy to be worn for an extended period of time, and this weight is even less suitable for performers, who are unable to carry such a weight while delivering such a performance, particularly without disturbing their hair, makeup, and costumes.

169. Furthermore, Strub discloses that the “components of the recording unit are positioned **within a backpack** that is worn by the recorder,” but such an embodiment is not feasible in the performance industry, as it would impair the visual aspects of the performance (e.g., a motion picture, newscasting, opera, concert, etc.). Ex-1003, 16:51-54 (emphasis added), Fig. 1, Fig. 6, Figs. 8A-C. Rather, the teachings of the ’443 Specification require a local audio device that is “suitable to be worn by a performer,” including those “manufactured in the form of body-packs, such as those typically worn by news announcers, performers, and the like.” Ex-1001, 7:50-52.

170. Additionally, whereas the local audio device taught by the ’443 Specification records the audio created by the performer who is wearing the local audio device, the recorders of Strub do not – the Strub recording units record audio that the recorder **hears**. *See supra* § VII.B.1. As such, Strub’s recording units record audio of an event, not of a performer’s, wherein the audio of the event is the mixed audio of multiple sources participating in the event occurring in front of the Strub recording units. Ex-1003, 8:8-16, 22:21-32. Such recordation as disclosed by Strub prevents the ability of Strub to create a multitrack recording because there are no independent tracks of each source of audio that may be independently manipulated or edited during or after creation

of a multi-track audio file.

171. Accordingly, it is my opinion that the claim element of “local audio device wearable by a creator of said locally generated audio” are wholly absent from Strub. Furthermore, no assertions have been made that Woo, Nagai, Gleissner, Winningstad, and Dwyer compensate for the deficiencies of Strub. As such, because Strub does not disclose Element 1[B], it is my opinion that Petitioners have failed to show that they will succeed at trial with respect to Claims 1-4, 7-9, 15, 17, 19-20, and 22-27, of the ’443 Patent.

3. Petitioners Fail to Demonstrate That a Combination of Strub, Woo, Nagai, Gleissner, Winningstad, and Dwyer Teaches Element 1[A] (Claims 1-4, 7-9, 15, 17, 19-20, 22-27).

172. It is my opinion that neither Strub nor Woo discloses a system that includes “at least one master timecode generator for generating a plurality of master timecodes,” as required by Claims 1-4, 7-9, 15, 17, 19-20, and 22-27.

173. The “master timecode generator” of the claims should be construed as “a producer of a master time reference signal that controls at least one other timecode generator,” and the claim element “master timecodes” should be construed as “a time reference signal used to synchronize at least one device.” *Supra* § VII.A.4.

174. Petitioners cites to Strub at 62:53-54, 63:50-60; 79:63-80:7, 75:25-57 (“SMPTE time code input”), to claim that the “master timecode generator” of the claim is disclosed by the “GPS satellite or SMPTE timecode source” of Strub. Petition, pg. 37-38. However, it is my understanding that none of these citations disclose a “producer of a master time reference signal that controls at least one other timecode generator.” Rather, Strub at 62:53-54 states “[f]or example, when the position sensing device is a GPS receiver, as described further below,” which has no bearing on the construction of Element 1[A].

175. Petitioners cite to Strub at 63:50-60 twice, which states:
Though the recording unit must not be constantly blocked from GPS satellites in order for the recording unit to receive such time signals, the recording unit need only be exposed to a GPS satellite for about a minute to enable the time signals to begin. Further, after that point, clock drift occurs slowly, even if the recording unit is blocked from the GPS satellites for a period of time. Additionally, a recording unit according to the invention typically also includes an internal clock, as described above, that, while not as accurate as the GPS time signals, can also be used to accurately time-stamp data.

Ex-1003, 63:50-60.

176. Petitioners also cite to Strub at 79:63-80:7, which states:
[A] recording unit according to the invention typically includes a clock that is used to time-stamp recording data as the recording data is acquired. However, the clocks of different recording units may not be adequately synchronized to enable use of the time-stamps associated with the recordings obtained from different recording units to synchronize those recordings. (If recording units according to the invention each include a GPS receiver, such mis-synchronization will only exist to an appreciable degree if one or more recording units are shielded from a GPS transmitter system for an extended period of time, e.g., several hours.)

Ex-1003, 79:63-80:7.

177. It is my opinion that Strub and Woo disclose situations in which either GPS time signals **or** the internal clock are used for time data, but neither reference discloses a master timecode generator that is “a producer of a master time reference signal that **controls** at least one other timecode generator.”

178. Indeed, Strub explicitly discloses that “the recording units may not include clocks for enabling time-stamping of the recordings.” Ex-1003,

80:8-10. The recording units disclosed by Strub do not include clocks to be synchronized with a master timecode, even in the face of disclosure that the GPS time signals time stamp the recording units. Strub also does not teach synchronization of any form of secondary clocks to the GPS time stamp. Strub's disclosed use of a GPS time signal as a clock for recording units is very different than the claimed master timecode generator that controls other timecode generators in the recording units.

179. [Reserved]

180. Strub does not disclose that the SMPTE time code input is used to control a timecode generator in a recording unit. Instead, Strub discloses the that the "SMPTE time code input can be used with professional camcorders or portable dockable videotape recorders (VTRs) ... to enable synchronization with an external device." Ex-1003 at 75:47-52. Such synchronization would not entail the SMPTE timecode source controlling at least one other timecode generator in the camcorder or videotape recorder, rather, connection of an SMPTE time code input thereto would merely allow the recorder to use the SMPTE time code as its time code source, rather than using its own internal clock. This is typically done by setting the camcorder to "External Timecode" or a similar option. Accordingly, this section of Strub would not have taught a

master timecode generator (i.e., an SMPTE timecode source) for generating a plurality of master timecodes because the SMPTE timecode source is not “a producer of a master time reference signal that controls at least one other timecode generator” as required by Claim 1. *See supra* § VII.A.4. As such, it is my opinion that Petitioners’ reliance on Strub’s disclosure of an SMPTE time code input at 75:25-57 (Petition, p. 38) is misplaced.

181. Woo’s “master clock,” is not a “master timecode generator for generating a plurality of master timecodes.” There is no teaching that Woo’s master clock produces a time reference signal used to synchronize at least one device via the control of at least one other (slave) timecode generator as there is no mention of any such secondary timecode generator in Woo, let alone ones that are controlled by Woo’s master clock. *See e.g.*, Ex-1004, cols. 4-8.

182. The mere disclosure of a master clock and master clock input ports on commercially-available equipment does not nearly meet the requirements of the claimed “master timecode generator,” that is a producer of a master time reference signal that controls at least one other timecode generator and produces a time reference signal used to synchronize at least one device. Rather, Woo clearly states that the time output of a GPS receiver must be combined with a pulse to perform synchronization:

(i) "The conventional date and time sentence output of the GPS navigation receiver is combined with a highly-accurate one pulse-per second ($\pm$ one microsecond) to form a time-keeping base for the time code output," (Ex-1004, 4:16-20); and

(ii) "Time code information is generated for connections 20, 24 and 38 by combining a one-pulse-per-second output from the GPS DSP 52 with the conventional date and time information available from deciphering the navigation satellite transmissions," (Ex-1004, 8:13-18).

183. It is my opinion that Woo is in sharp contrast with the '443 Patent, which produces timecodes having sufficient data to synchronize audio segments. Ex-1001. Woo needs to use a highly accurate pulse because the output of the GPS receiver is insufficient to achieve synchronization. Woo relies on a video sync generator to provide the accurate pulse to the time code, but each individual sync generator in Woo is not synchronous to each other. *See* Ex-1004 9:5-19. As such, the time codes are not synchronized to a common, master time code signal. *See id.* This is in sharp contrast with the '443 Specification, which discloses production of timecodes having sufficient data to synchronize audio segments to the exact audio sample. Ex-1001, 4:65-5:5, 6:19-29, 10:62-

11:4, 11:29-35, 14:52-56, 15:54-16:7, and 17:9-16.

184. It is my understanding that the GPS-based characteristics of the Woo timecodes prevent the GPS satellite from producing a continuous master time reference signal that is capable of controlling at least one other timecode generator, as this requires transmission and reception of a series of signals for the synchronization to, and control by, a master time reference signal used to synchronize at least one device. Ex-1004, 9:5-20. Furthermore, it is commonly understood that audio equipment is not capable of receiving GPS-based timecodes or other satellite signals in many filming locations, like subways or other underground locations. The wireless transmission of signals taught by the '443 Specification provides for accurate transmission of master timecodes in all locations including those not accessible by satellite signals. Strub does not compensate for the deficiency of Woo, as Strub explicitly states that “the recording unit must not be constantly blocked from GPS satellites in order for the recording unit to receive such time signals.” Ex-1003, 63:50-52.

185. As such, it is my opinion that Woo would not have taught the requirements of Element 1[A] when combined with Strub. and therefore the combination does not render obvious independent Claim 1, or the claims dependent therefrom.

186. Neither Strub nor Woo disclose a “master timecode generator,” or “a plurality of master timecodes,” as required by Claims 1-4, 7-9, 15, 17, 19-20, and 22-27, and Petitioners do not assert that these elements are shown by Nagai, Gleissner, Winningstad, or Dwyer. As such, it is my understanding that Petitioners have failed to show that they will succeed at trial with respect to at least one of the aforementioned claims of the ’443 Patent.

4. Petitioners Fail to Demonstrate That a Combination of Strub, Woo, Nagai, Gleissner, Winningstad, and Dwyer Teaches Claim 15.

187. Petitioners purport that Strub “discloses or renders obvious combining the local audio data electronically to create a single multi-track data file,” and therefore Strub discloses Claim 15. Petition, pg. 64. Petitioners reference Strub’s recording units 105-108 and 300, stating that each of these recording units “receives and displays multiple tracks of local audio data received from the other recording units.” Petition, pg. 64. However, Petitioners again misrepresent Fig. 1 and the capabilities of Strub recording units 105-108 (*supra* § VII.B.2). Their citation to Strub at 66:7-25 is completely irrelevant and is directed to a discussion of how “additional devices can be easily added to the recording unit.” Ex-1003, 66:8. Similarly, Petitioners’ statement that “Strub’s recording units 105-108 ... receives and displays multiple tracks of local audio

data received from the other recording units” is also false and none of the cites quoted by Petitioner support this factually untrue assertion. The only section of Strub that discusses recording units 105-108 is Strub at 8:7-29, which makes no claim to these units having these capabilities, and, as discussed above, the depiction of these units in Fig. 1 fails to show a display screen or any other type of equipment capable of displaying any type of data. Additionally, Petitioners reference to Strub at 44:48-45:7 is irrelevant, as it only pertains to “a device capable of simultaneously displaying multiple **visual recordings** at one time.” Ex-1003, 42:51-52 (emphasis added). Strub at 44:48-45:7 does not discuss audio recordings.

188. Indeed, Strub discloses recording unit 300 having “an audio recording display device 307,” but Petitioner has failed to equate any of the cited language to any Claim 15 language or explain how display of audio or “local audio data” is possible or how the “blending,” has anything to do with combining local **audio** data to create a single multi-track data file. The display of multiple recordings does not require the generation of any type of file, which is a required element of Claim 15. Strub teaches an audio mixer but does not teach the ability to save simultaneously “displayed” audio tracks in a single file. Nor does Strub ever describe multi-track recording or creation of the types of

files necessary to create a “single multi-track data file,” as required by Claim 15, which requires creation of “a data file consisting of multiple, separate streams of sound with individual instruments or voices recorded on separate tracks.” *Supra* § VII.A.3. Nothing in Strub indicates that the audio mixer disclosed therein must have the capability of including the ability to save the displayed audio as a file suitable to create a multi-track file. In fact, the Strub “audio mixer” seems more akin to a “video mixer” that merely directs multiple video streams to a display screen, without any need to save it to a file. Further, even if Strub’s audio mixer had the ability to create a file, it would not be a multi-track file as required by Claim 15 because there are no individual sources of performer audio as needed to create such a multi-track recording.

189. It is my opinion that Petitioners failed to show that Claim 15 is obvious, as Petitioners have not only admitted that the multi-track data file creation is not taught by Strub, but has also failed to introduce a reference that teaches such a creation along with the requisite showing of why a POSA would combine Strub with another reference when Strub has nothing to do with multi-track recording. It is my opinion that Petitioners have failed to show why a POSA would combine Strub with a reference when Strub is unrelated to multi-track recording. Furthermore, Petitioners have made no showing that recording units 300 are

“wearable” as also required by Claim 15. *Supra* § VII.B.2. The wearability of recording unit 300 is much different than wearability of units 105-108, as the latter include many less components and less weight.

190. Petitioners also argue that “[t]o the extent Zaxcom contends that Strub does not disclose the additional elements of Claim 15, those elements are taught by Woo.” Petition, pp. 66. Woo does not teach “said local audio data is combined electronically to create a single multi-track data file,” because it does not teach multi-track recording, creation of a multi-track file, nor “local audio data.” Woo makes no reference to multi-track recording or creation of any type of multi-track file, as required by Claim 15. *Supra* § VII.A.3. Furthermore, Woo does not disclose the creation of “local audio data” of Claim 15, which requires “creating local audio data from said locally generated audio” and “local audio device wearable by a creator of said locally generated audio.” Ex-1001, 21:65-66, 56-57. As discussed (*supra* § VII.B.2), the recording unit records the audio generated by another entity (i.e., performer 12), not that of the operator of the Woo recording units (e.g., recorders 14 and 16). Woo is not related to the field of audio multi-track recording, and it does not teach the capture of multiple, individual, separate, isolated sources of audio needed to create such a multi-track recording. Woo has nothing to do with an audio multitrack which

combines all independently editable, sources of audio together to create a single multitrack audio file, which comprises one final soundtrack for a movie, etc. Videos cannot be combined in the same sense as audio as one can only watch one video at a time, whereas one can hear all audio sources simultaneously. As such, Woo does not compensate for the deficiencies of Strub because the operator of Woo's recording unit (i.e., Woo's recorder) does not generate locally generated audio nor can it create local audio data because Woo's audio is not "**created** by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio."

191. Petitioners state that because "Woo's system uses software and timecode information to 'blend'—i.e., combine—two different recorded tracks from different microphones to generate a 'time-synchronized composite recording'—*i.e.*, a single data file comprising a multi-track combination of the first two recordings." Petition, pg. 66. However, such arguments are incorrect because said "recorded tracks" are not of "local audio data." Video has no applicability to multi-track audio files, which relate solely to audio. Additionally, the composite recording is not a "single multi-track data file," as required by Claim 15. Furthermore, Petitioners seem to conflate the "time-seamless blend" and "time-synchronized composite recordings" of Woo. Ex-

1004, 10:4, 11:15, 12:14. Petitioners cite to Woo at 8:44-51 to support their arguments regarding “time-synchronized composite recording,” but that citation instead teaches “time-seamless blend.” “Time-synchronized composite recording” and “time-seamless blend” are not the same technologies – “time-synchronized composite recording” is for post recording edification, and the language of Claim 10 of Woo, which states, “an apparently time-seamless blend” teaches that the “time-seamless blend” relates to time code information but lacks precise synchronization. Ex-1004, 10:3-4. Therefore, it is my opinion that because Strub and Woo do not disclose the elements of Claim 15. Because Petitioners also do not assert that these elements are shown by Nagai or Gleissner, it is my understanding that Petitioners have failed to show that there is a reasonable likelihood that Claim 15 is unpatentable.

5. Petitioners Fail to Demonstrate That a Combination of Strub and Woo Teaches Claim 17

192. Strub teaches that system controller 301 is a microcontroller (e.g., a 68HC11G), not a DSP (Ex-1003, 14:7-13). A POSA would not consider, nor did Strub consider, a DSP an obvious design choice in lieu of a microcontroller as each of these devices perform different functions. Strub suggests a DSP as a separate device for beam forming, not as a replacement for the microcontroller itself.

6. Petitioners Fail to Demonstrate That a Combination of Strub, Woo, Nagai, Gleissner, Winningstad, and Dwyer Teaches Claim 19.

193. As previously discussed, “body pack” as properly construed, means “a small box housing a transmitter.” *Supra* § VII.A.6. Additionally, as Claim 19 is dependent upon Claim 1 of the ’443 Patent, the “at least one local audio device” of Claim 19 must also be “wearable.” *See* Ex-1001, 21:56.

194. Again, Petitioners do not provide their own construction of “body pack.” *See* Petition, pg. 68. The examples provided by Petitioners to show that Strub discloses a “body pack” are inconsistent with a proper construction of body pack, namely, “a small box housing a transmitter capable of being worn on a belt or in a pocket” (*supra* § VII.A.6) and the ’443 Specification. *See* Ex-1001, 7:46-52 (“Such audio devices may be manufactured in the form of body-packs, such as those typically worn by news announcers, performers, and the like.”); *see also* Ex-1001, 10:52-53 (“Local audio devices 102 may be bodypacks such as the local audio device 102 depicted in FIG. 3B.”). As previously discussed (*supra* § VIII.A.2), if a backpack is required to “wear” a device, this inherently means that the device itself is not wearable. In sharp contrast, the bodypack of Fig. 3B and the ’443 Specification is worn directly by a user without the need for a “backpack” or other “wearable apparatus.”

195. Furthermore, it is my opinion that Petitioners’ various citations to Strub do not cure the aforementioned deficiencies. For example, Petitioners at page 68 cite to “Ex. 1003, 11:11-17 ([T]he recording unit [is] mounted on (e.g., attached on, or worn by)...the recorder’),” but incorrectly quotes the reference and inexplicably replaces “be adapted to be” with “[is],” which changes the entire context of what Strub teaches. Rather, upon reviewing Strub, the proper and full quotation makes it clear that the referenced Strub recording unit is not able to be worn on the recorder’s body – it is meant to be held by a recorder unless it is **adapted** in some manner that makes it possible to mount it on the recorder. Petitioners’ remaining citations all fail to show that Strub’s “local audio device” is a bodypack, and further prove that the Strub “local audio device” is not even wearable (as also required by Claim 19) because these devices all require the use of some form of wearable apparatus to allow a user to wear the “local audio device,” i.e., a “backpack,” a “waist strap,” a “harness,” and the myriad of other wearable apparatus shown in the cited Strub figures, which are required because the “local audio device” itself is not wearable as required by Claim 19. Further, Petitioners still have not shown that the depictions of the alleged wearable recording unit in Figs. 1, 4, 6, 8A-9B depict recording units that are of the type that include all of the local audio device elements required by Claim 19 (e.g., a transmitter and a receiver).

196. In view of the foregoing, it is my opinion that Strub does not disclose “at least one local audio device is a body pack,” as it fails to disclose a local audio device with all of the elements required by Claim 19 in the form of a body pack. Additionally, as Petitioners do not assert that these elements are shown by Woo, Nagai, or Gleissner, and it is my understanding that they have failed to show that there is a reasonable likelihood Claim 19 is unpatentable.

7. Petitioners Fail to Demonstrate That A POSA Would be Motivated to Combine the Cited References to Create the Invention of the Challenged Claims of the '443 Patent With a Reasonable Expectation of Success.

197. It is my opinion that the Petitioners have failed to show why a POSA would attempt to solve a dropout problem of a “Virtual Wireless Multitrack Recording System” (Ex-1001, Title), by combining Strub, Woo, and Winningstad, as none teach multi-track recording capabilities nor the capturing of individual sources of audio as required for multi-track recording. To the contrary, Strub, Woo, and Winningstad capture single tracks of audio that do not include individual, isolated tracks of audio per performer/audio source (e.g., speakers or performers).

198. Furthermore, Petitioners merely makes conclusory statements that “each of the local audio devices of Strub, Woo, and Winningstad wirelessly

receives master timecodes from a master timecode generator and uses the timing information from the master timecodes to stamp the local audio.” Petition, pg. 71. It is unclear how the teachings of Strub, Woo, and Winningstad could be combined as suggested by the Petitioners to achieve the claimed invention with a reasonable expectation of success, because the references disclose substantially different methods from each other and the claimed invention.

199. As previously discussed, the ’443 Patent requires a master timecode generator that is “a producer of a master time reference signal that controls at least one other timecode generator,” and creates “a time reference signal used to synchronize at least one device,” wherein this time reference signal is non-GPS-based and is used to coordinate the various tracks of a multi-track recording system.

200. [Reserved]

201. It is my opinion, in view of the foregoing, that a POSA would not have been motivated to combine Strub, Woo and/or Winningstad, since they use different approaches, and it is not clear that the outcome of this combination improves anything, never mind solving the problem of dropouts in multi-track recording systems as neither Strub, Woo, nor Winningstad teach multi-track recording or capture individual sources of audio as required for multi-track

recording. It is my opinion that one would not be motivated to combine Strub and Woo because Strub already discloses a solution to post-production editing (i.e., participants share their locally recorded audio after a recorded event). *See* Ex-1003, 80:52-58. Therefore, applying the Woo solution in post-production in Strub would have been unnecessary. A POSA would not have been motivated to change Strub's simple system used by recreational recorders with a complex technical solution requiring multiple GPS receivers, video sync generators, delay circuitry, commands and requests, etc., especially because doing so would dramatically increase the size, weight and battery requirements of the Strub recording units. Such an increase would make them even more unwieldy, cumbersome and impractical than they already are. Furthermore, Winningstad teaches away from post-production editing and therefore could not solve the problems solved by the inventions of the '443 Patent. Rather, Winningstad discloses that "[t]o ensure that the time and date encoder 88 in the DD device 26 is not tampered with, an internal password may be required to be entered ... in order to modify the clock settings provided by data and time encoder 88." Ex-1008, 8:12-16. Thus, it is my opinion that a POSA would not have been motivated to combine Strub and Winningstad, as Winningstad teaches away from post-production editing solutions, and discloses a system which includes mechanisms to prevent the editing of recorded data. *See* Ex-1008, 2:31-32 ("The

DAR System can also record the date and time of operator recordings thus reducing the possibility of **falsifying the date, time, and sequence of recorded events.**”).

202. It is my understanding that the invention of Winningstad is intended for circumstances such as when a “police officer 14 may activate the DAR system 12 to record events surrounding a routine vehicle stop of a suspected drunk driver.” Ex-1008, 4:5-7. Winningstad is absent of any disclosure that such recordings are for the purposes of a “Virtual Wireless Multitrack Recording System.” Ex-1001, Title. Therefore, it is my opinion that a POSA would not have been motivated to change Strub’s simple system used by recreational recorders with a complex technical solution requiring multiple GPS receivers, video sync generators, delay circuitry, commands and requests, etc., especially because doing so would dramatically increase the size, weight and battery requirements of Strub’s units, making them even more unwieldy, cumbersome and impractical than they already are.

203. It is also my opinion that Strub, Woo, and Winningstad are not in the same field as the claimed invention, and their disclosures are not reasonably pertinent to the problem faced by the ’443 Patent inventors. As such, it is my opinion that they are non-analogous art to the ’443 Patent. Strub, Woo, and

Winningstad are not in the field of the claimed invention of the '443 Patent, and their disclosures are not reasonably pertinent to the problem faced by the '443 Patent inventors. Strub is not in the field of professional sound recording, but is in the field of low attention, social recording. Woo discloses a “GPS receiver [that] comprises a data output port for communicating time code information formatted according to standards.” Ex-1004, Abstract. Winningstad is also not in the field of professional sound recording but is in the field of recording “video and audio events viewed and/or heard by the operator.” Ex-1008, Abstract.

204. It is my understanding that the claimed invention of the '443 Patent does not mention any GPS satellite or receiver; it instead relates to using a master timecode generator to control other timecode generators in other recorders and “to accurately stamp its recorded audio ... [which] allows multiple individually recorded audio tracks to be combined into one or more multi-track audio files.” Ex-1001, 3:34-43 GPS signals are known to be incompatible with performance recording as many recording locations (e.g., subways or other underground locations) are not capable of receiving satellite signals. Therefore, it is my opinion that a POA would not have looked to Strub, Woo, or Winningstad to address the problem identified in the '443 Patent.

205. [Reserved]

206. [Reserved]

207. [Reserved]

208. [Reserved]

209. [Reserved]

VIII. THE SPECIFIC GROUNDS FOR INVALIDITY REGARDING THE '207 PATENT

A. Claim Construction

1. “locally generated audio” (Claims 17-19, 21-23, 33-34, 59-60, and 66).

210. I have reviewed the claim constructions proposed by Patent Owner in its Patent Owner Responses and agree with them. I agree that a POSA would understand that the claim element “locally generated audio” and “audio data” as recited in Claims 17-19, 21-23, 33-34, 59-60, and 66, means “separate, isolated audio created by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio,” and “audio data” means “mono or stereo audio files created from separate, isolated locally generated audio, such files suitable for creation of a

multi-track audio file.”

211. The ’207 Specification is entitled “Virtual Wireless **Multitrack** Recording System” (emphasis added), and it is my understanding that the multitrack capabilities described therein are described throughout the ’207 Specification. *See* Ex-1001, Abstract (“Systems and methods for wirelessly recording multi-track audio files ... the locally recorded audio may be used to repair or replace any audio lost or corrupted during transmission to the master recorder.”).

212. It is my understanding that multitrack recording is a technique that captures multiple audio sources (i.e., the voices of individual performers) independently onto separate tracks instead of mixing them together in real time, thereby allowing audio engineers to independently edit each track during and after recording. This understanding is consistent with the following definition: “[a] multitrack recording consists of multiple, separate streams of sound without defined locations in a sound field. During a typical music-recording session, **individual instruments or voices will be recorded on separate tracks.**” *See* Ex-2014, pg. 1 (Federal Agencies Digital Guidelines Initiative, Glossary) (emphasis added).

213. It is my opinion that when read in the context of the ’207

Specification, which specifically requires a multitrack recording system, and in the context of the claim language, it is clear that the element “locally generated audio” as recited in Claims 17-19, 21-23, 33-34, 59-60, and 66, means “audio created by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio,” and “audio data” means “mono or stereo audio files created from separate, isolated locally generated audio, such files suitable for creation of a multi-track audio file,” as these definitions allow each performer to create his or her own audio track to be subsequently used and independently edited in the resultant multitrack recording. Any definition of these terms that collects a single track of mixed audio that includes all ambient or scratch audio generated by all individuals and/or audio sources being recorded is improper because multitrack recording requires at least two discrete, independent, isolated audio tracks, typically one audio track per audio source (e.g., a performer) and anything less would be inconsistent with the ’207 Specification, which describes:

(i) “Systems and methods for wirelessly recording **multi-track** audio files ... each performer is equipped with a local audio device capable of locally recording **the respective performer's audio**”

(Ex-1001, Abstract) (emphasis added);

(ii) “[P]erformers may each don a local audio device ... audio from

multiple local audio devices may be transmitted to a **multi-track** recorder for recording of the audio event while each local audio device locally records **its performer's audio**” (Ex-1001, 14:23-24, 15:21-24) (emphasis added); and

(iii) “[A]udio received from each of the local audio devices (e.g., **the local audio device of each performer**) may be combined to create one or more **multi-track** audio files,” (Ex 1001, 17:30-33) (emphasis added).

214. It is also my opinion that the language of the preamble of Claims 17 and 59 also support this construction, which require “at least one audio device wearable by a user for storing locally generated audio and transmitting the locally generated audio to a remote device,” and “[a]n audio device wearable by a user for storing locally generated audio and communicating the locally generated audio to a wireless transmitter,” respectively. Ex-1001, 44:56-58, 47:52-54. In other words, the locally generated audio is created by the person wearing the local audio device. The creation of a multi-track file can only happen when independent, isolated, separate tracks of each of the performer’s voices exist.

215. As such, it is my opinion that the locally generated audio is

primarily the audio of the performer wearing the local audio device that is typically close miked to the performer to capture only, or primarily, the audio of the performer wearing the local audio device so that this audio may be its own independent track of the multi-track audio file.

2. “[local] audio device wearable by a user for storing locally generated audio” (Claims 17-19, 21-23, 33-34, 59-60, and 66).

216. I agree that a POSA would understand “local audio device wearable by a user for storing locally generated audio,” as recited in the preamble of Claims 17 and 59, to mean “a local audio device suitable to be worn by the performer who creates the audio that is recorded by that performer’s local audio device.” It is my opinion that a POSA at the time of the invention reading this claim term would understand that this definition must be consistent with the purpose of the ’207 Patent, which is a “[v]irtual wireless **multitrack** recording system.” Ex-1001, Title (emphasis added). A POSA would understand that any claim construction inconsistent with multitracking is inconsistent with the ’207 Specification as a whole.

217. The ’207 Specification nevertheless supports this definition of “wearable” by using similar terms to describe. For example, the ’207 Specification states that local audio devices “are worn by the performers of the

audio event.” Ex-1001, 11:13-14. Further, the ’207 Specification states, “each performer is equipped with a local audio device capable of locally recording the respective performer's audio.” Ex-1001, Abstract. The ’207 Specification also states, “allowing a wireless recorder 108 ... to accurately combine multiple independent tracks of audio, wherein each independent track of audio is received from one of the performer's local audio device 102.” Ex-1001, 12:21-25.

218. Claims 17-19, 21-23, 33-34, 59-60, and 66 also require the local audio device to include “an audio input port configured to couple to an audio input device to receive the locally generated audio,” where the audio input device is, for example, a microphone, and that the audio input device port is any commercially available audio input device port that is compatible with the audio input device. Ex-1001, 44:63-64, 47:61-62, 6:39-43, Ex-1001, 10:46-49 (“[L]ocal control unit 310 receives recordable audio from local audio input device 312, which may be worn by the performer and connects to local audio device 102.”). That is, the performer is equipped with a microphone which connects to an input port of the performer’s local audio device to allow it to capture the audio of the specific performer wearing the local audio device. In view of such disclosures, it is my opinion that the ’207 Specification supports

this definition of the claim elements.

219. The '207 Patent is a continuation of the U.S. patent application no. 14/808,589, filed July 24, which is a continuation of the U.S patent application no. 13/530,040, which is a continuation-in-part of the U.S. patent no. 12/838,164, which claims the benefit of and is a continuation-in-part of the U.S. patent application no. 11/404,735, filed April 14, 2006, which claims the benefit of and is a continuation-in-part of the U.S. patent application no. 11/181,062, filed July 14, 2005, and issued as U.S. Patent No. 7,711,443. Upon, my review of the prosecution history of the '443 Patent, which is the parent of the '207 Patent, makes it clear that “wearable” means “suitable to be worn by the performer” and excludes devices that are merely portable or able to be carried in a backpack. In the '443 Patent’s Notice of Allowance, Examiner Elbin included a statement of reasons for allowance that distinguished between “portable” and “wearable”: “the closest prior art of record (Nagra-V) teaches a portable audio recorder ... The prior art fails to teach or suggest ... wherein the device is ‘wearable by a creator of said locally generated audio.’” Ex-2017, pg. 2. The Nagra-V is portable, having dimensions of 11.4” x 8.6” x 4.5” with a weight of approximately 7.6 to 9 pounds, and sold with a soft carrying case NV-SCC. See Ex-2018, pg. 2.

**3. “master timecode generator” and “master timecodes”
(Claims 17-19, 21-23, 33-34, 59-60, and 66).**

220. [Reserved]

221. [Reserved]

222. [Reserved]

223. I agree that a POSA would understand the claim elements “master timecode generator” and “master timecodes,” as recited in Claims 17-19, 21-23, 33-34, 59-60, and 66 to mean “a producer of a master time reference signal that controls at least one other timecode generator” and “a time reference signal used to synchronize at least one device,” respectively.

224. It is my opinion that this proposed construction is consistent with the meaning of the claim element itself. The claim term “master” means “[one] that has control over another or others.” Ex-2019, p. 3 (The American Heritage Dictionary, Third Edition, Houghton Mifflin Company, 1993). Figure 5 of the ’207 Specification discloses modifying the speed of a local timecode generator as necessary to maintain its synchronization with a master timecode generator. Ex-1001, Fig. 5, 3:16-19; Ex-1001, 16:4-7 (“[i]n this manner, the speed of the local timecode generator and the sample rate of the ADC are increased to

maintain synchronization with the master timecode generator.”). Figure 6 describes the master timecode generator’s use of a master timecode, or time reference signal used to synchronize at least one device: “[a]t 604, a master unit ... transmits master timecodes to each local audio device, and ... each local audio device synchronizes (e.g., jam syncs) its respective on board local timecode generator with the master timecodes received from the master unit, thereby synchronizing all local audio device timecode generators with the master timecode generator.” Ex-1001, 17:9-16. That is, the master timecode generator creates master timecodes that are used to control the speed of the local timecode generator to ensure the two timecode generators are synchronized. Ex-Ex-1001: 4:64-5:5, 6:19-29, 11:30-33, 14:52-59, and 17:9-16. Accordingly, the language of both the claims and the ’207 Specification support Zaxcom’s proposed construction.

4. “jam synchronize”/ “jam sync”

225. I agree that a POSA would understand “jam synchronize,” as recited in Claims 17-19, 21-23, 33-34, 59-60, and 66, to mean “aligning the internal clock of one device, program or application with the internal clock of another device, program or application.” Ex-2006, pg. 8. It is my opinion that upon application of this definition to Claims 17-19, 21-23, 33-34, 59-60, and 66, the claim element of “jam synchronize the local timecode generator to the

master timecode generator,” means “aligning the internal clock of the local timecode generator with the internal clock of the master timecode generator.”

226. The '207 Specification provides ample support for the claim construction of “aligning the internal clock of the local timecode generator with the internal clock of the master timecode generator.” For example, the '207 Specification at 6:3-8 states that the master timecode “provides a time reference for all local audio devices 102, which may use this information for a variety of purposes such as *jam synchronizing their respective local timecode generators 304* (FIG. 3A), adjusting the speed of the local timecode generators 304 (FIG. 3A), timestamping locally recorded audio, etc.” (emphasis added). Ex-1001, 6:3-8 (italics added, bold in original). “[T]he local control unit reads the master timecode contained in the RX buffer and jam synchronizes the local timecode generator with the master timecode. The jam sync synchronizes the local audio device with the RCU while allowing the local audio device to supply its own timecode.” *Id.* at 14:52-56. “[E]ach local audio device synchronizes (e.g., jam syncs) its respective on board *local timecode generator with the master timecodes received from the master unit*, thereby synchronizing all local audio device timecode generators with the master timecode generator.” Ex-1001, 17:10-16 (emphasis added). In other words, each local audio device

generates its own local timecode via its local timecode generator but also receives a master timecode from a master timecode generator of a master unit. When the local audio devices receive the master timecode, the local timecode generator is synchronized to the received master timecode. As such, A POSA would understand that the internal clock (e.g., the local timecode generator of the local audio device) aligns with the clock of the master unit (e.g., the master timecode generator).

227. In view of the foregoing, it is my opinion that the claim language of “receive a master timecode from a master timecode generator and jam synchronize the local timecode generator to the master timecode generator” means “aligning the internal clock of the local timecode generator with the internal clock of the master timecode generator,” and that a POSA would understand as such.

B. Petitioners Fail to Demonstrate That the Combination of Strub, Woo, Nagai, and Gleissner Renders Claims 17-19, 21-23, 33-34, 59-60, and 66 Obvious Under § 103 (Ground 1).

228. [Reserved]

229. [Reserved]

1. Petitioners Do Not Demonstrate That a Combination of Strub, Woo, Nagai, and Gleissner Teaches Elements 17[Pre], 17[G], 17[H], 59[Pre], 59[F], and 59[G] (Claims 17-19, 21-23, 33-34, 59-60, and 66)

230. It is my opinion that the combination of Strub, Woo, Nagai, and Gleissner does not teach 17[Pre], 17[G], 17[H], 59[Pre], 59[F], and 59[G], which all involve “locally generated audio,” nor are they taught by both Strub and Woo. Petition, pp. 30-37, 53-55, 70-71. Petitioners again do not propose a definition of “locally generated audio.”

231. As previously discussed, “locally generated audio,” is “audio created by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio,” as is required for incorporation of such “locally generated audio” in a multitrack recording as described in the ‘207 Specification. *See supra* § VIII.A.1. The locally generated audio is the audio created by the performer wearing the local audio device. The ‘207 Specification teaches the use of “at least one audio input port for receiving locally generated audio from an audio input device,” where the audio input device (e.g., a microphone) is worn by the performer and connected to the performer’s local audio device to capture only, or primarily, the audio created by the performer wearing the local audio device, so this audio may be recorded as its own individual, isolated track. This individual track of

audio is then combined with other performers' individual tracks of audio to create a multi-track audio file. Ex-1001, Abstract, 14:23-24, 17:5-8, 18:31-32.

232. It is my opinion that Strub and Woo teach the exact opposite of “locally generated audio,” as the audio of Strub and Woo is locally “received” or “heard” by a recorder (i.e., the person in Strub who records the audio) – not audio generated, or created, by the recorder. Ex-1003, 22:16-33 (describing the recordation of sound to be for sound coming from in front of the recorder); *see also* Ex-1004, 5:3-5 (describing the recordation of sound of a performance from multiple vantage points). The audio recorded by Strub’s recording units 105-108, 200, and 300, and Woo’s recorders 14 is the sound *heard* by the recorder 14, which is a single track of mixed audio that does not include individual, isolated tracks of audio per performer/audio source (e.g., speakers or performers). This received, “heard” audio is not suitable for multi-track recording because it does not include individual, separate, isolated tracks of audio for each performer that can be independently edited.

233. Instead, it is my understanding that Strub details the receipt of a single track of combined audio by a recorder, rather than generation of audio by a performer that is recorded on a dedicated track:

- (i) “[I]t is believed preferable to bias the audio recording in

favor of recording sound from in front of the recorder for several reasons: i) a person or persons with whom a recorder is having a conversation will typically be in front of the recorder; ii) a recorder will typically face the parties participating in a conversation that does not include, but is of interest to, the recorder; iii) a recorder will often face the source of other sounds in which the recorder has an interest; and iv) conversations that occur behind a recorder are typically either conversations which the recorder does not want to hear or are conversations which the parties to the conversation may not intend the recorder to hear,” (Ex-1003, 22:21-32);

(ii) “Mounting at or just above chest level also enables the audio data acquisition device to pick up spatial imaging of the audio that is similar to that which is experienced by the recorder's ears,” (Ex-1003, 22:59-63); and

(iii) “[U]se of a directional microphone ... has been found to enhance the ability to record the voices of other people, particularly when those people are relatively distant from the recorder,” (Ex-1003, 23:8-11).

234. The person in Woo who is creating the audio that is to be

recorded (i.e., the performer) does not wear any type of recording device. Rather, Woo's recorder (e.g., recorders 14 and 16) obtains recordings of the audio generated by the performer from independent vantage points: "[s]ystem 10 is used to record the live performance of a performer 12 ... recorder 14 captures the performance from its vantage point while another recorder 16 independently captures the same performance from its own vantage point." Ex-1004, 5:1-5. That is, Woo does not teach "locally generated audio" because Woo's audio is not "**created** by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio." Rather, recorder 14, who is not generating the audio but is wearing the purported local audio device, is recording the audio generated by another entity (i.e., performer 12).

235. Furthermore, it is my opinion that the single track of audio that does not include individual, isolated tracks of audio per performer/audio source (e.g., speakers or performers) received by a Strub or Woo recorder cannot be used for multitrack recording as required by the '207 Specification because it does not record each performer on an individual, dedicated audio track. Neither Strub nor Woo discloses creating independent tracks of performer audio, multi-track recording, or creating a multi-track audio file. As such, it is my opinion

that Strub and Woo do not disclose Elements 17[Pre], 17[G], 17[H], 59[Pre], 59[F], or 59[G], and as Petitioners do not assert that these elements are shown by any of the other cited references, Petitioners have failed to show that there is a reasonable likelihood that at least one of Claims 17-19, 21-23, 33-34, 59-60, and 66 is unpatentable.

2. Petitioners Fail to Demonstrate That a Combination of Strub, Woo, Nagai, and Gleissner Teaches Element 17[Pre] or 59[Pre] (Claims 17-19, 21-23, 33-34, 59-60, and 66).

236. It is my opinion that the combination of Strub, Woo, Nagai, and Gleissner would not have taught “audio device wearable by a user for storing locally generated audio,” as disclosed in the preambles of Claims 17 and 59. While Petitioners argue otherwise, they do so in the absence of a claim construction of “audio device wearable by a user for storing locally generated audio,” but nonetheless, state Elements 17[Pre] and 59[Pre] are taught by Strub and Woo. Petition, pp. 30-37, 70.

237. It is my opinion that Petitioners fail to state any proof in support of their assertion that a Strub recording unit having the features of Claims 17-19, 21-23, 33-34, 59-60, and 66, which include a transmitter, is wearable. Ex-1001, 44:62, 47:53-54.

238. Strub discloses different variations of recording units – some

with basic recording capabilities (the “Basic Strub Recording Unit”) and some with recording and transmitter/receiver capabilities (the “Advanced Strub Recording Unit”). Strub’s recording units 105-108 are only described as Basic Strub Recording Units without any mention of an ability to transmit or receive data. Ex-1003, 8:13-29. Similarly, Strub’s recording unit 200 is also a Basic Strub Recording Unit as it only includes system controller 201, data acquisition device 202, data storage device 203, and control interface device 204 – no transmitter/receiver. Ex-1003, Fig. 2. In contrast, Strub’s recording unit 300 is an Advanced Strub Recording Unit that specifically includes a transmitter 309 and receiver 310. Further, in this Advanced Strub Recording Unit, data acquisition is performed via two devices (video data acquisition device 302 and audio data acquisition device 303) instead of the one data acquisition device used in the Basic Strub Recording Unit 200. Ex-1003, 11:48-50, 12:13-16.

239. Petitioners repeatedly equate the local audio device of Claims 17-19, 21-23, 33-34, 59-60, and 66 to Strub’s recording unit 300, presumably because it includes a transmitter, as required for the local audio device of the Claims 17-19, 21-23, 33-34, 59-60, and 66. Petition, pp. 30-37; Ex-1001, 44:62, 47:53-54. However, in analyzing Element 17[Pre] and 59[Pre], Petitioners only refer to Fig. 1 to prove wearability, i.e., “Strub discloses at

least one audio device—*e.g.*, one of recording units 105-108, **200, and 300**—which are worn by a plurality of users as depicted in Ex-1003, **Fig. 1.**” Petition, pg. 31 (emphasis added). This statement is blatantly incorrect – the only recording units shown in Fig. 1 are recording units 105-108 – recording units 200 and 300 are NOT shown in Fig. 1. Further, Petitioners have made no showing that recording units 105-108 include a transmitter. Ex-1003, 8:10-29.

240. The other support cited by Petitioners on page 33 of the Petition further fails to show that Strub teaches Elements 17[Pre] and 59[Pre] and actually proves that the Strub device is not wearable. Strub at 4:21-31 refers to a Basic Strub Recording Unit and does not mention an integral transmitter. Strub at 14:59-15:11 and 16:66-17:24 discuss the wearability of the visual acquisition device – not the recording unit as a whole – and actually proves that the visual acquisition device portion of a Strub recording unit is not wearable because it must be attached to a “wearable apparatus” such as a “helmet, headband, or head harness ... that is worn by the recorder” or “mating VelcroTM strips ... can be used to attach the visual data acquisition device ... on headgear, and armband, a legband, or other wearable apparatus.” Ex-1003, 17:1, 7-24. That is, the “wearable apparatus” is wearable, but the visual data acquisition device is

not, hence the need to attach it to a “wearable apparatus.”

241. Strub at 38:65-39:11 only pertains to wearability of an “audio communication device” – not a recording unit. At 66:33-51, Strub does not describe wearability of a recording unit with a transmitter because it describes a “data acquisition device.” The acquisition device used in the Basic Strub Recording Unit. Ex-1003, Figs. 2 and 3, 66:33-51. And, the lead in to Strub at 66:33-51 makes clear that even this Basic Strub Recording Unit without a transmitter may not be wearable: “it is desirable to ‘package’ the recording unit components in any manner that achieves some or all of the desired characteristics of a recording unit according to the invention, e.g., small size, low weight, unobtrusiveness, and capability of being mounted on a recorder (**or, at least, capability of being easily carried by the recorder**).” Ex-1003, 66:27-32 (emphasis added). Even the Strub specification questions whether a Basic Strub Recording Unit without a transmitter is actually wearable and certainly does not address wearability when additional components are added thereto (e.g., a transmitter).

242. Strub at 67:54-68:10 and 72:9-19 again refer to the wearability of a Basic Strub Recording Unit 700 with no transmitter. Ex-1003, 68:11-14. Accordingly, Petitioners have failed to plead any facts to show that the

combination of the Cited References discloses a wearable device having all of the features required by the challenged claims of the '207 Patent. Regardless of whether 17[Pre] and 59[Pre] are determined to be limiting, it is my understanding that Petitioners have failed to meet the particularity requirements of 35 § U.S.C. 312(a)(3), which requires Petitioners to prove that a Strub recording unit with a transmitter is wearable – it does not require Zaxcom to prove that it is not wearable. It is my opinion that Petitioners have failed to meet this burden. It is my opinion that Strub's recording unit is portable – not wearable. "Fig. 6 illustrates a recording unit . . . Most of the components of the recording unit are enclosed within a backpack 601" and "a recording unit as shown in Fig. 6 . . . weighs about 24 pounds." Ex-1003, 67:30-33, 45-47. If Strub's recording unit was "wearable," it would not require a backpack to attach it to a recorder's body. The Strub recording unit is not worn – it is **carried** within a backpack. One might send a child to school with a sandwich in the child's backpack – this does not make the sandwich wearable. As previously discussed, a proper claim construction of Element 17[Pre] and Element 59 [Pre] excludes portable devices. *See supra* § VIII.A.2.

243. It is also my opinion that neither Strub nor Woo disclose a local audio device that is "suitable to be worn by a performer," as required by a

proper construction of Element 17[Pre] and Element 59[Pre]. The '207 Patent describes a recording system that “wirelessly records audio events such as performances, movie takes, etc.,” and the local audio devices are “are worn by the performers of the audio event.” Ex-1001, 4:1-2, 11:13-14.

244. Upon my review of Strub, it is evident that Strub’s “local audio devices” are not “suitable to be worn by a performer,” as the Strub recording unit is much too large, visible, heavy, and imposing to be worn during the filming of performances. The use of the Strub recording unit for “social recording” (Ex-1003, Abstract), and to “facilitate later reminiscence” (Ex-1003, 2:63), does not require the same portability and discreteness as a device used to record audio events in a professional context, such as performances or movie takes. Ex-1001, 4:1-2 (“Recording system 100 wirelessly records audio events, such as **performances, movie takes**, etc. having one or more **performers**.”). (emphasis added). This professional context requires such local audio devices to be of a size, weight, and shape that can be worn by performers without distracting the audience from the visual performance of the audio events. The weight, size, and shape of the Strub recording unit prohibits such application. Figure 6 of Strub teaches a “recording unit [that] weighs about 24 pounds,” and it is a Basic Strub Recording Unit without a transmitter, contrary to the

requirements of the challenged claims of the '207 Patent. Ex-1003, 67:45-47; Ex-1001, 44:62, 47. Accordingly, a Strub recording unit having all of the features of the challenged claims of the '207 Patent will exceed 24 pounds. Carrying a backup in excess of 24 pounds is not suitable for recreational filming as it is too heavy to be worn for an extended period of time, and this weight is even less suitable for performers, who are unable to carry such a weight while delivering such a performance, particularly without disturbing their hair, makeup, and costumes.

245. Furthermore, Strub's disclosure that the "components of the recording unit are positioned **within a backpack** that is worn by the recorder" is not feasible in the performance industry, as it would impair the visual aspects of the performance (e.g., a motion picture, newscasting, opera, concert, etc.). Ex-1003, 16:51-54 (emphasis added), Fig. 1, Fig. 6, Figs. 8A-C. To the contrary, the teachings of the '207 Specification require a local audio device that is "suitable to be worn by a performer," including those "manufactured in the form of body-packs, such as those typically worn by news announcers, performers, and the like." Ex-1001, 8:62-64. Such bodypacks may be worn on a belt or otherwise hidden on the performer (e.g., in a pocket). Ex-2020, pg. 5.

246. It is my understanding that the local audio device taught by the

'207 Specification records the audio created by the performer who is wearing the local audio device, the recorders of Strub and Woo do not – the Strub recorder records audio the recorder **hears** and the Woo recorder records the event and its performers. *See supra* § VIII.B.1. As such, it is my opinion that Strub and Woo both record event audio, not performer audio, wherein the event audio is the mixed audio of multiple sources participating in the event occurring in front of the Strub or Woo recorder. Ex-1003, 8:8-16, 22:21-32; Ex-1004, 5:1-5. This negates the ability of Strub or Woo to create a multitrack recording because there are no independent, separate, isolated tracks of each source of audio that may be independently manipulated during or after creation of a multitrack audio file.

247. In view of the foregoing, it is my opinion that neither Strub nor Woo disclose Elements 17[Pre] and 59[Pre], and as Petitioners do not assert that these elements are shown by Nagai, or Gleissner, Petitioners have failed to show that there is a reasonable likelihood that at least one of the challenged claims of the '207 Patent is unpatentable.

3. Petitioners Fail to Demonstrate That a Combination of Strub, Woo, Nagai, and Gleissner Teaches “receive a master timecode from a master timecode generator and jam synchronize the local timecode generator to the master timecode generator” (Claims 17-19, 21-23, 33-34, 59-60, and 66).

248. It is my opinion that neither Strub nor Woo discloses Elements 17[F] and 59[E], namely “receive a master timecode from a master timecode generator and jam synchronize the local timecode generator to the master timecode generator.”

249. Petitioners’ claim that “Strub discloses receiving a master timecode ... and jam synchronizing the local timecode generator – the internal clock – to the master time code generator using the master timecode,” is inadequately supported, and, as such, should be wholly disregarded. Petition, pg. 51. For example, Petitioners support their assertion that a “master timecode generator,” is a “GPS satellite or SMPTE timecode source” by citing to Strub, stating that at “62:53-54 (position sensing device 311 can be a GPS receiver), 63:50-60 ([T]he recording unit need only be exposed to a GPS satellite for about a minute to enable the time signals to begin. Further, after that point, clock drift occurs slowly, even if the recording unit is blocked from the GPS satellites for a period of time. Additionally, a recording unit according to the invention typically also includes an internal clock, as described above, that, while not as accurate as the GPS time signals, can also be used to accurately time-stamp data.’); 79:63-80:7 ([The]

recording unit...includes a clock that is used to time-stamp recording data as the recording data is acquired.’ However, adequate synchronization requires that each recording unit ‘include a GPS receiver’ and not be ‘shielded from a GPS transmitter system for an extended period of time....’), 75:25-57 (‘SMPTE time code input ... to enable synchronization with an external device’), Fig. 3 (position sensing device 311),” however, none of these citations disclose “a producer of a master time reference signal that controls at least one other timecode generator.”

Supra § VIII.A.3.

250. Strub at 62:53-54 states “[f]or example, when the position sensing device is a GPS receiver, as described further below,” which has no bearing on the construction of Elements 17[F] and 59[E]. Strub at 63:50-60, states:

Though the recording unit must not be constantly blocked from GPS satellites in order for the recording unit to receive such time signals, the recording unit need only be exposed to a GPS satellite for about a minute to enable the time signals to begin. Further, after that point, clock drift occurs slowly, even if the recording unit is blocked from the GPS satellites for a period of time. Additionally, a recording unit according to the invention typically also includes an internal clock, as described above, that, while not as accurate as the GPS time signals, can also be used to accurately time-stamp

data.

Ex-1003, 63:50-60.

251. Strub at 79:63-80:7 discloses:

[A] recording unit according to the invention typically includes a clock that is used to time-stamp recording data as the recording data is acquired. However, the clocks of different recording units may not be adequately synchronized to enable use of the time-stamps associated with the recordings obtained from different recording units to synchronize those recordings. (If recording units according to the invention each include a GPS receiver, such mis-synchronization will only exist to an appreciable degree if one or more recording units are shielded from a GPS transmitter system for an extended period of time, e.g., several hours.)

Ex-1003, 79:63-80:7.

252. The language of Strub and Woo discuss circumstances in which either GPS time signals **or** the internal clock are used for time data, but neither reference discloses a master timecode generator that is “a producer of a master time reference signal that **controls** at least one other timecode generator.” It is my opinion that Petitioners have failed to reference language in Strub which

indicates that the GPS signal or SMPTE timecode signal interacts in any way with the internal clock of the Strub recording units.

Ex-1003, 79:63-80:7.

253. Strub at 75:25-57 discloses:

Some portable video recorders include an external communication port that enables communication with an external device. For example, some camcorders made by Sony Corporation (e.g., CCD-TR101) include such an external communication port that enables communication with an external device in accordance with a communication protocol known as LANC (also referred to as Control-L). Some camcorders sold by Ricoh (e.g., R-18H), Nikon and Canon (e.g., ES-900) also enable communication with an external device in accordance with the LANC protocol. Some camcorders made by Panasonic (e.g., AG-196U) include an external communication port that enables communication with an external device in accordance with a different, though comparable, communication protocol (referred to as a "5-pin editing terminal"). Some camcorders made by JVC (e.g., GR-DVL9000) include an external communication port that enables communication with an

external device in accordance with still another comparable communication protocol referred to as JLIP. Additionally, the IEEE 1394 (e.g., Firewire or iLink) communication protocol can be used with some camcorders (e.g., Sony DCR-PC1, Sony DCR DVR 900, Panasonic AG-EZ30U) to enable communication to an external device. Additionally, SMPTE time code input can be used with professional camcorders or portable dockable videotape recorders (VTRs), such as the Sony BVV-5 dockable Beta-SP VTR, to enable synchronization with an external device. Such portable video recorders can be used to construct a hybrid recording unit according to the invention, since the communication capabilities of the portable video recorder enable the portable video recorder and auxiliary device to coordinate operation as needed to provide the additional functionality of the auxiliary device.

Ex-1003, 75:25-57.

254. The aforementioned disclosures of Strub does not give further detail identifying such “external device,” or its purposes, and merely states that “[s]uch portable video recorders can be used ... since the **communication** capabilities ...enable the portable video recorder and auxiliary device to

coordinate operation. Ex-1003, 75:51-55 (emphasis added). It is my opinion that the language of these aforementioned sections discusses scenarios in which either GPS time signals **or** the internal clock are used for time data, but neither section discloses a master timecode generator that is “a producer of a master time reference signal that **controls** at least one other timecode generator,” as required by a proper construction of Elements 17[F] and 59[E]. While Petitioners argue that a “POSA would have understood that Strub’s use of a GPS signal or SMPTE timecode input to synchronize the internal clock comprises facilitates jam synchronizing the internal time clock to a master timecode generator,” Petitioners have failed to reference language in Strub which indicates that the GPS signal or SMPTE timecode signal interacts in any way with the internal clock of the Strub recording units.

255. Strub explicitly states that “the recording units may not include clocks for enabling time-stamping of the recordings.” Ex-1003, 80:8-10. It is my understanding that the disclosed recording units of Strub that are time-stamped by GPS time signals do not include clocks to be synchronized with a master timecode. Strub also does not teach synchronization of any form of secondary clocks to the GPS time stamp. Strub’s disclosed use of a GPS time signal as a clock for recording units is very different than the claimed master

timecode generator that controls other timecode generators in the recording units.

256. [Reserved].

257. While Petitioners' rely on Strub's disclosure of an SMPTE time code input at 75:25-57 (Petition, p. 52) this reliance is misplaced because Strub does not disclose that the SMPTE time code input is used to control a timecode generator in a recording unit. Rather, Strub states that the "SMPTE time code input can be used with professional camcorders or portable dockable videotape recorders (VTRs) ... to enable synchronization with an external device." Ex-1003 at 75:47-52.

258. Such a synchronization would not entail the SMPTE timecode source controlling at least one other timecode generator in the camcorder or videotape recorder, rather, connection of an SMPTE time code input thereto would merely allow the recorder to use the SMPTE time code as its time code source, rather than using its own internal clock. This is typically done by setting the camcorder to "External Timecode" or a similar option. Accordingly, this section of Strub would not have taught a master timecode generator (i.e., an SMPTE timecode source) for generating a plurality of master timecodes because the SMPTE timecode source is not "a producer of a master time

reference signal that controls at least one other timecode generator” as required by Claims 17 and 59. *See supra* § VIII.A.3. In view of the aforementioned, Strub could not possibly disclose a means to “jam synchronize the local timecode generator to the master timecode generator using the master timecode,” as required by the challenged claims of the ’207 Patent, as Strub fails to disclose two distinct timecode sources whereby one timecode generator aligns with another timecode generator. Rather, while Strub discloses the use of a GPS time signals **or** the internal clock as producers of time data, Strub is absent of any language that would indicate the internal clock is aligned with the GPS time signal.

259. It is my opinion that Woo does not compensate for the deficiencies of Strub as Woo’s “master clock” is not a “master timecode generator for generating a plurality of master timecodes.” Rather, there is no teaching that Woo’s master clock produces a time reference signal used to synchronize at least one device via the control of at least one other (slave) timecode generator. Indeed, there is no mention of any such secondary timecode generator in Woo, let alone that they are controlled by Woo’s master clock. *See e.g.*, Ex-1004, cols. 4-8.

260. At 9:1-4, Woo discloses that “[t]he clock output 128 is

conventionally formatted and structured, and is preferably compatible with present-day commercially-available equipment that have master clock input ports.” *Id.* at 9:1-4. The mere disclosure of a master clock and master clock input ports on commercially-available equipment does not nearly meet the requirements of the claimed “master timecode generator” that is a producer of a master time reference signal that controls at least one other timecode generator and produces a time reference signal used to synchronize at least one device. Woo clearly states that the time output of a GPS receiver must be combined with a pulse to perform synchronization.

(i) "The conventional date and time sentence output of the GPS navigation receiver is combined with a highly-accurate one pulse-per second ($\pm$ one microsecond) to form a time-keeping base for the time code output,” (Ex-1004, 4:16-20); and

(ii) “Time code information is generated for connections 20, 24 and 38 by combining a one-pulse-per-second output from the GPS DSP 52 with the conventional date and time information available from deciphering the navigation satellite transmissions,” (Ex-1004, 8:13-18).

261. This is in sharp contrast with the ’207 Patent, which produces

timecodes having sufficient data to synchronize audio segments. *See* Ex-1001. Instead, Woo needs to use a highly accurate pulse because the output of the GPS receiver is insufficient to achieve synchronization. Woo relies on a video sync generator to provide the accurate pulse to the time code, but each individual sync generator in Woo is not synchronous to each other. *See* Ex-1004 9:5-19. As such, the time codes are not synchronized to a common, master time code signal. *See id.*

262. It is my understanding that the GPS-based characteristics of the Woo timecodes prevent the GPS satellite from producing a continuous master time reference signal that is capable of controlling at least one other timecode generator, as this requires transmission and reception of a series of signals for the synchronization to, and control by, a master time reference signal used to synchronize at least one device. Ex-1004, 9:5-20. Furthermore, it is common knowledge that audio equipment is not capable of receiving GPS-based timecodes or other satellite signals in many filming locations e.g., subways or other underground locations.

263. In contrast, the wireless transmission of signals taught by the '207 Specification provides for accurate transmission of master timecodes in all locations including those not accessible by satellite signals. Strub does not cure

the deficiency of Woo, as Strub explicitly states that “the recording unit must not be constantly blocked from GPS satellites in order for the recording unit to receive such time signals.” Ex-1003, 63:50-52.

264. As such, it is my opinion that neither Strub nor Woo disclose a “master timecode generator” nor “master timecode,” and as Petitioners do not assert that these elements are shown by Nagai or Gleissner, Petitioners have failed to show there is a reasonable likelihood that at least one of the challenged claims of the ’207 Patent is unpatentable.

4. Petitioners Fail to Demonstrate That a Combination of Strub, Woo, Nagai, and/or Gleissner Teaches a “control unit operable to ... jam synchronize the local timecode generator to the master timecode generator using the master timecode” (All Challenged Claims).

265. It is my opinion that Petitioners have failed to show how both Strub and Woo teach Elements 17[F] and 59[E], as neither Strub nor Woo teaches a “master timecode generator” or a “master timecode” for the reasons discussed. *Supra* § VIII.B.4. Therefore, it is my opinion that Petitioners failed to show that Strub teaches the ability to “jam synchronize.”

5. Petitioners Fail to Demonstrate That A POSA Would Be Motivated to Combine the Cited References to Create the Invention of the Challenged Claims of the ’207 Patent With a Reasonable Expectation of Success.

266. It is my opinion that Petitioners have failed to show why a POSA

would attempt to solve a dropout problem of a “Virtual Wireless Multitrack Recording System” (Ex-1001, Title), by combining Strub and Woo. Neither teach multi-track recording capabilities nor the capturing of individual sources of audio as required for multi-track recording. Rather, both Strub and Woo capture single tracks of audio that do not include individual, isolated tracks of audio per performer/audio source (e.g., speakers or performers).

267. Furthermore, it is my understanding that Petitioners’ motivation to combine Strub and Woo is rooted in forbidden hindsight analysis and merely makes conclusory statements that “each of the local audio devices of Strub and Woo wirelessly receives master timecodes from a master timecode generator and uses the timing information from the master timecodes to stamp the local audio.” Petition, pg. 24. It is unclear how the teachings of Strub and Woo could be combined as suggested by the Petitioners to achieve the claimed invention with a reasonable expectation of success, because the references disclose methods that substantially differ from each other and the claimed invention.

268. As previously discussed, the ’207 Patent includes a master timecode generator that is “a producer of a master time reference signal that controls at least one other timecode generator,” and creates “a time reference signal used to synchronize at least one device,” wherein this time reference

signal is non-GPS-based and is used to coordinate the various tracks of a multi-track recording system.

269. [Reserved]

270. In view of the foregoing, it is my opinion that a POSA would not have been motivated to combine Strub and Woo, since they use different approaches, and it is not clear that the outcome of this combination improves anything, never mind solving the problem of dropouts in multi-track recording systems as neither Strub nor Woo teach multi-track recording or capture individual sources of audio as required for multi-track recording.

271. Additionally, a POSA would not have been motivated to combine Strub and Woo, as Strub already discloses a solution to post-production editing (i.e., participants share their locally recorded audio after a recorded event). In view of this existing solution, applying the Woo solution in post-production in Strub would have been unnecessary. A POSA would not have been motivated to change Strub's simple system used by recreational recorders with a complex technical solution requiring multiple GPS receivers, delay circuitry, commands and requests, etc., especially because doing so would dramatically increase the size, weight and battery requirements of the Strub units, making them even more unwieldy, cumbersome and impractical than they

already are.

272. It is also my opinion that Strub and Woo are not in the same field as the claimed invention, and their disclosures are not reasonably pertinent to the problem faced by the '207 Patent inventors, thereby making them non-analogous art to the '207 Patent.

273. It is my opinion that Strub and Woo are not in the field of multi-track recording, nor are they capable of multi-track recording as they do not record individual sources of audio. Strub is not in the field of professional sound recording, but is in the field of low attention, social recording. Woo discloses a “GPS receiver [that] comprises a data output port for communicating time code information formatted according to standards.” Ex-1004, Abstract. The claimed invention does not mention any GPS satellite or receiver; it instead relates to using a master timecode generator to control other timecode generators in other recorders and “to accurately stamp its recorded audio ... [which] allows multiple individually recorded audio tracks to be combined into one or more multi-track audio files.” Ex-1001, 4:5-14. GPS signals are known to be incompatible with performance recording as many recording locations (e.g., subways or other underground locations) are not capable of receiving satellite signals. As such, it is my opinion that a POSA would not have looked to Strub

or Woo to address the problem identified in the '207 Patent.

274. [Reserved]

275. [Reserved]

276. [Reserved]

277. [Reserved]

278. [Reserved]

279. [Reserved]

280. [Reserved]

9. Objective Indicia Of Non-Obviousness Support The Patentability Of The Issued Claims Of The '443 and '207 Patents.

281. It is my opinion that the evidence of secondary considerations indicates that the claims of the '443 Patent and the '207 Patent would not have been obvious to a person of ordinary skill in the art. In particular, the non-obviousness of the claims are also supported by secondary considerations of non-obviousness, including satisfaction of a long felt need by the patented invention, failure of others, and industry praise of the patented invention

282. As explained in the declarations of the motion picture and

television sound technicians of ordinary skill in the art at the time of the invention of the ‘443 Patent and the ‘207 Patent who have decades of experience, there was a long felt need for a wireless, wearable, transmitting and recording device that could reliably capture sound data from actors recording a movie or television show. IPR2025-00230; Ex-2126; Ex-2127 and IPR2025-00232; Ex. 2036; Ex. 2037.

283. It is my opinion that the claimed invention of the ‘443 Patent and the ‘207 Patent satisfied this long felt need with a wireless, wearable, transmitter/recorder that combines audio data stored locally in the wearable recorder with the same audio data transmitted and stored at a remote recorder. IPR2025-00230; Ex-2126; Ex-2127 and IPR2025-00232; Ex. 2036; Ex. 2037. It is also my opinion that others failed to achieve what Glenn Sanders accomplished with the patented invention of the ‘443 Patent and the ‘207 Patent.

284. Zaxcom received praise and recognition from persons of ordinary skill within the motion picture and television industry for the patented invention of the ‘207 Patent. IPR2025-00230; Ex-2126, ¶ 3, 6-9; Ex-2127, ¶5-7 and IPR2025-00232; Ex. 2036, ¶ 3, 6-9; Ex. 2037, ¶5-7. Indeed, Glenn Sanders and the co-inventor of the ‘443 Patent and the ‘207 Patent, Howard Stark, received the Technical Achievement Award from the Academy of Motion Picture Arts

and Sciences for the digital recording wireless products that embody the claimed inventions of the ‘443 Patent and the ‘207 Patent. IPR2025-00230; Exs. 2113; 2114, and IPR2025-00232; Exs. 2044; 2045. The belt pack is Zaxcom’s local audio device, and the award was provided directly for its ability to locally record while simultaneously transmitting the audio. Again, this award has a clear nexus to the ability of Zaxcom’s product to simultaneously transmit and locally record audio data. This award further praised the distribution of a common timecode signal (i.e., master timecode) [as per Claim 17[F/I]/59[E/H]] and wireless remote control of the local audio device [as per Claim 66].

285. Mr. Sanders also received the Emmy award from the Academy of Television Arts and Sciences for the Zaxcom, Inc. digital recording wireless products that embody the claimed inventions of the ‘443 Patent and the ‘207 Patent. IPR2025-00230; Exs. 2110-2112, and IPR2025-00232; Exs. 2041-2043.

286. Exhibit 2128 in IPR2025-00230 and Exhibit 2038 in IPR2025-00232 is a true and correct copy of a Program of the 68th Engineering Emmy Awards (except for the labels which were added to comply with the Board’s rules), which I maintain in the ordinary course of business as a member of the Engineering Awards Committee of the 68th Emmy Awards. Exhibit 2129 in IPR2025-00230 and Exhibit 2039 in IPR2025-00232 is a true and correct copy of a press release entitled “TELEVISION ACADEMY ANNOUNCES

HONOREES FOR THE 68TH ENGINEERING EMMY® AWARDS” (except for the labels which were added to comply with the Board’s rules), which I maintain in the ordinary course of business as a member of the Engineering Awards Committee of the 68th Emmy Awards. Exhibit 2130 in IPR2025-00230 and Exhibit 2040 in IPR2025-00232 is a true and correct copy of the Primetime Emmy Awards Official Entry Form For Outstanding Achievement in Engineering Development (except for the labels which were added to comply with the Board’s rules), which I maintain in the ordinary course of business as a member of the Engineering Awards Committee of the 68th Emmy Awards.

287. There is a strong nexus between the objective indicia of non-obviousness and the issued claims of the ‘443 Patent and the ‘207 Patent. The Zaxcom technology that satisfied a long-felt need and received industry praise and recognition include the features that are recited in the issued claims of the ‘443 Patent and the ‘207 Patent including a system for recording locally generated audio comprising at least one master timecode generator for generating a plurality of master timecodes; and at least one local audio device wearable by a creator of said locally generated audio including at least one local audio device receiver for wirelessly receiving said master timecodes; at least one audio input port for receiving locally generated audio from an audio input device; at least one memory; at least one control unit in communication with

said local audio device receiver, said audio input device, and said memory for creating local audio data from said locally generated audio and storing said local audio data in said memory; and at least one local audio device wireless transmitter for wirelessly transmitting said local audio data in real time, said at least one local audio device wireless transmitter in communication with said at least one control unit. Furthermore, wherein said local audio data includes stamped local audio data and unstamped local audio data; wherein said stamped local audio data includes at least one timestamp to reference at least a portion of said local audio data to at least one of said master timecodes; and wherein said unstamped local audio data does not include a reference to said master timecodes. Additionally, the Zaxcom technology that satisfied a long-felt need and received industry praise and recognition include the features that are recited in the issued claims of the '443 Patent and the '207 Patent including a local audio device wearable by a user for storing locally generated audio and transmitting the locally generated audio to a remote device, the remote device including at least one of a receiver, a recorder, a mixer, and combination thereof; the audio device comprising a wireless transmitter, an audio input port configured to couple to an audio input device to receive the locally generated audio, a memory, a local timecode generator operable to generate a local timecode, and a control unit coupled to the wireless transmitter, the audio input

port, the memory, and the local timecode generator. Furthermore, the control unit is operable to: (i) receive a master timecode from a master timecode generator and jam synchronize the local timecode generator to the master timecode generator using the master timecode, (ii) transmit the locally generated audio to the remote device via the wireless transmitter; and (iii) store the locally generated audio in the memory as audio data; and (iv) stamp at least a portion of the audio data with the local timecode.

288. Indeed, the Zaxcom technology was praised for the claimed features such as “[d]igital recording of microphone signal in the wireless transmitter to provide backup recording of the original microphone signal” (Exhibit 2128 in IPR2025-00230 and Exhibit 2038 in IPR2025-00232), “[r]ecord audio file protection in case of power failure or media removal” (Exhibit 2128 in IPR2025-00230 and Exhibit 2038 in IPR2025-00232), “[d]istribution to each digital wireless body pack of a common time code signal” (Exhibit 2128 in IPR2025-00230 and Exhibit 2038 in IPR2025-00232), and “[w]ireless digital remote control of the wireless microphone transmitter including pre-amp gains” (Exhibit 2128 in IPR2025-00230 and Exhibit 2038 in IPR2025-00232). Zaxcom was praised as being “widely considered the industry leader in digital wireless technology” (Exhibit 2129 in IPR2025-00230 and Exhibit 2039 in IPR2025-00232) and for having “significantly contributed to

the advancement of television broadcasting” (Exhibit 2129 in IPR2025-00230 and Exhibit 2039 in IPR2025-00232). Zaxcom’s “innovative products” have been praised as “the first digital wireless transmission system for microphones and a production tool that married wireless transmission with a recording device located within the actor’s body pack.” (Exhibit 2129 in IPR2025-00230 and Exhibit 2039 in IPR2025-00232). In addition, the ‘443 and ‘307 Patents are listed as covering the Zaxcom wireless recording technology that received an Emmy award. (Exhibit 2130 in IPR2025-00230 and Exhibit 2040 in IPR2025-00232).

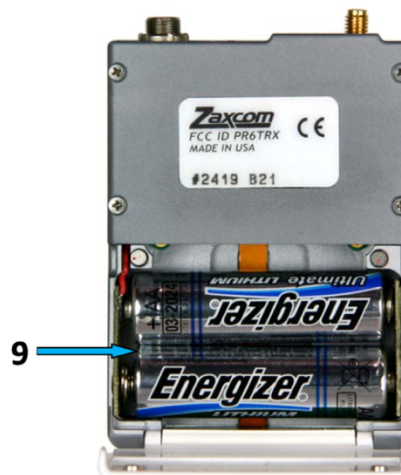
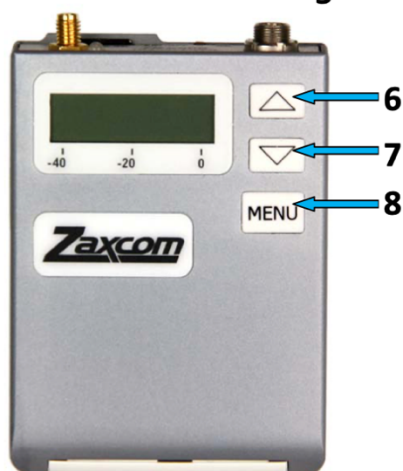
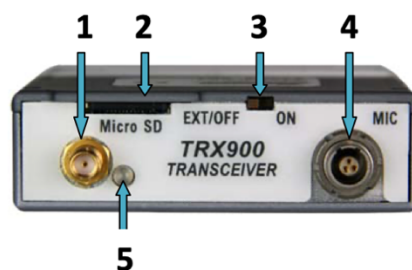
289. The products for which the inventors received the Emmy award, the Technical Achievement Award from the Academy Award of Motion Picture Arts and Sciences, and other industry praise include the TRX900AA, TRX900LA, and TRX900LAS. As indicated by the claim charts below, these products contain all of the limitations recited in the challenged claims.

IPR2025-00232, with its respective exhibits:

Claim 17 & 59	TRX900AA Manual (Ex-2031) and TRX900LA & TRX900LAS Manual (Ex-2032)
17[Pre]/59 [Pre]/17[A]	



Ex-2032, p. 4.



Ex-2031, p. 4.

See also Ex-2031, p. 5; Ex-2032, p. 6 (“ZaxNet Status...RX...TX”).

17[B]/59[C]

“4. Microphone/Input connector”

Ex-2031, p. 4; Ex-2032, p. 4.

17[C]/59[A]

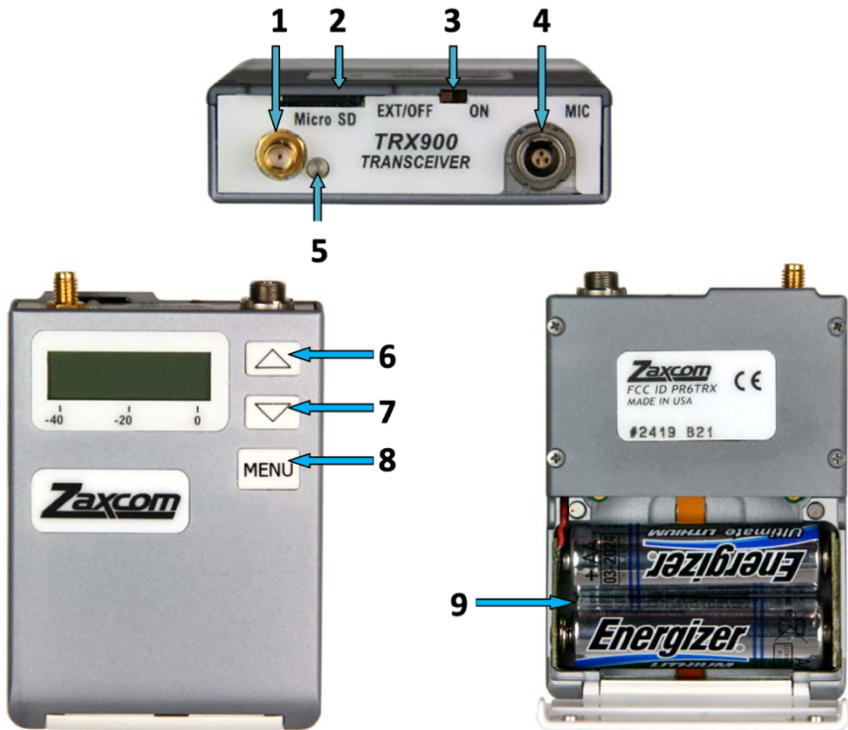
“To Format a Card...2...insert the memory card...6. You will see “FORMATTING FAT 32”...8. If “SUCCESS” appears power cycle the TRX and make sure the unit will record.”

Ex-2031, p. 14; Ex-2032, p. 14.

17[E]/59[D]	See “Transport Control” and “IFB Receive to Transmit time” figures. Ex. 2031, pp. 7, 12; Ex. 2032, pp. 7, 12, respectively.
17[F]/59[E] 17[H]/59[G]	“ZaxNet Status...RX...TX”. Ex-2031, p. 6; Ex-2032, p. 6. See “TX Disable” and “UHF Transmit Frequency” figures. Ex. 2032, pp. 7, 18, respectively.
17[I]/59[H]	See “Transport Control” and “IFB Receive to Transmit time” figures. Ex. 2031, pp. 7, 12; Ex. 2032, pp. 7, 12, respectively.
17[D]/59[B]	“menu sets the timecode frame rate that will be recorded.” Ex. 2032, p. 8. See also Ex. 2032, pp. 14-15; Ex. 2031, p. 8, 14, 36.
17[G]/59[F]	“transmitter is sending ZaxNet timecode and audio.” Ex. 2031, p. 6. See also Ex. 2031, p. 2; Ex. 2032, p. 19.

IPR2025-00230, with its respective exhibits:

Claim 1	TRX900AA Manual (Ex-2131) and TRX900LA & TRX900LAS Manual (Ex-2132)
1[Pre]/1[B]	 Ex-2132, p. 4.

	 Ex-2131, p. 4. <i>See also</i> Ex-2131, p. 5; Ex-2132, p. 6 (“ZaxNet Status...RX...TX”).
1[A]/1[C]	<i>See</i> “Time Code Source” and “Time Code Output” figures. Ex. 2131, p. 15; “Time Code Source” figure. Ex. 2132, p. 15;
1[D]	“4. Microphone/Input connector” Ex-2131, p. 4; Ex-2132, p. 4.
1[E]	“To Format a Card...2...insert the memory card...6. You will see “FORMATTING FAT 32”...8. If “SUCCESS” appears power cycle the TRX and make sure the unit will record.” Ex-2131, p. 14; Ex-2132, p. 14.
1[F]	<i>See</i> “Transport Control” and “IFB Receive to Transmit time” figures. Ex-2131, pp. 7, 12; Ex-2132, pp. 7, 12, respectively.
1[G]	“transmit RF audio and record”. Ex-2131, p. 21; Ex-2132, p. 19. <i>See also</i> “UHF Transmit Frequency” Ex-2132, p. 7.
1[H]/1[I]/1[J]	“Time Code Jam Mode” and “Time Code Source” Ex-2131, p. 15; Ex-2131, pp.14-15. <i>See also</i> Ex-2131, p. 5; Ex-2132, p. 6 (“ZaxNet Status...RX...TX”).

10. Strub’s Disclosure Does Not Enable a POSA to Make and Use the Invention of the Challenged Claims

290. Strub teaches a fantastical, futuristic device (for April 2000) with virtually unlimited features, many of which were not technologically able to be done on Strub's filing date of April 21, 2000, and some of which are still not able to be done today. For the items that were technically feasible as of Strub's filing date, Strub fails to teach a POSA how to make the invention without undue experimentation. These suggested parts are not readily combinable and are not designed or feasible for use in a portable, battery powered device, particularly one used for activities "such as hiking, snow skiing, or ping pong." (Ex-1003, 67:59-61). If a POSA were to figure out how to design the feasible aspects of Strub's system, it would certainly not fit in a backpack and would not otherwise be "wearable" as required by the challenged claims.

291. Any taught "starting point" for building the Strub invention from the disclosure of Strub is a non-working embodiment that greatly elevates the experimentation required by a POSA. A POSA in 2000 would have had to conduct years of undue experimentation to fill the gaps due to Strub's lack of disclosure.

292. [Reserved]

293. [Reserved]

294. And, once a POSA figures out all of these items, the POSA is left

to figure out how to compress the resulting system into a purportedly “wearable” device that includes a portable power supply (e.g., batteries) capable of supplying power to over eleven different devices with varying power inputs. Such size and battery abilities were not within the ordinary experimentation of a POSA as they were beyond the state of the art in April 2000 for devices having less features.

295. In April 2000, designing devices with reasonable operating time on portable power was a major hurdle for all audiovisual electronics manufacturers because, at that time, battery chemistry lagged behind the high and continuous power draw of mechanical media, inefficient displays, and early digital signal processors. The batteries in 2000 were largely NiMH and Li-ion with low energy densities of 100-300 Wh/kg, that were not capable of supporting spinning media, video processing chips, and audio and video capture and playback equipment for any reasonable period of time, the latter of which could require 5-15W of power. Further, processors at that time did not have efficient power management such as DVFS. Every feature added to a device such as the one taught by Strub added further power demand and cooling need, and decreased battery life. This cooling would require more than one fan to prevent overheating and would thus affect the sound into the microphone. Further, Strub fails to teach mitigation of the effects of vibration that would be caused by, for

example, the operation of the cooling fans, the spinning heads of equipment including, but not limited to, mechanical storage drives.

296. In April 2000, the portable power of the Strub device would have been a limiting factor. Strub provides no instruction on the power system design, heat dissipation or air flow of each component, many of which were designed to be powered by a stationary computer, not batteries. The complete lack of guidance about how to modify chassis mounted, mains powered devices to work in a backpack environment with batteries would leave a POSA incapable of building Strub without extraordinary experimentation.

297. Strub provides no instruction regarding RF duplexing and shielding required for such an invention. Strub is also deficient in describing how to enable both transmission and reception using the same antenna. In addition, digital circuitry within the unit would emit signals within the RF spectrum, further degrading received signals while transmitter leakage could distort or corrupt analog and digital A/V signals. Strub does not address techniques to mitigate RF impairments (e.g., multipath interference, gaussian noise, impulse noise, fading, intermodulation distortion, and cross-talk) or error correction. For analog transmissions, these impairments include ghosts, sync loss, excessive picture noise, and loss of color. For digital transmissions, they cause data loss or corruption. And, Strub fails to address video synchronization in its entirety,

without which no clear video could be displayed by a Strub unit. Strub suggests, but fails to teach, MPEG compression to enable digital video transmission, In 2000, no consumer, battery-powered MPEG encoder existed. The Tiernan Video SE4000 was demonstrated at NAB, but was a rack-mount or fixed housing unit. IPR2025-00230, Ex-2136; IPR2025-00232, Ex-2049. Compact, battery-operated systems were not available until approximately after 2002. IPR2025-00230, Ex-2145; IPR2025-00232, Ex-2060.

298. In the U.S., each television channel is 6 MHz wide, and only 80 MHz of unlicensed spectrum was available in the 2.4 GHz band, which is used by others (e.g., WiFi, Bluetooth, Zigbee, etc.). Strub does not guide a POSA on the “sharing” of this spectrum nor how its device locates “clear” channels. Without a mechanism to detect available spectrum, each recorder would require an RF spectrum analyzer to locate channels, and both transmitters and receivers would need to be frequency agile. Strub discloses no method of setting frequencies or coordinating among the units, nor does it address the guard bands required to minimize interference.

299. Regarding Strub’s assertion that it can incorporate artificial intelligence in its recording unit, this is another aspirational suggestion of an artificial intelligence technology that could not be implemented by a POSA in 2000 and would not actually exist in a battery powered device until at least 2011

(i.e. when Apple first introduced “Siri”).

300. Strub teaches a “Motorola 68HC11 microcontroller” as the heart of Strub’s recording unit 300 (i.e., system controller 301) (Ex-1003, 14:7-13). In April 2000, the Motorola 68HC11 was available in at least 5 different versions (i.e., A/D/E/F/and G series). For the purposes of this analysis, we refer to the most advanced version available in April of 2000, the 68HC11G microcontroller (“68HC11G”). IPR2025-00230, Ex-2115; IPR2025-00232, Ex-2048.

301. Strub describes that “system controller 301 controls the operation of, and mediates interaction among, the other components of the recording unit 300.” Ex-1003, 12:10-13. This is *technically infeasible* as the 68HC11G is an 8bit word control device with a maximum clock rate of 2.1 MHz, 64 kb of memory space, 16-24 kb of ROM/EEPROM, 512 bytes of on-board RAM, two serial I/O ports (an asynchronous bi-directional UART type, and a synchronous bi-directional port, which are both limited to 10s of kbps of data bandwidth and not suitable for real time data capture or transfer), no graphics or video capture hardware, and 8-channel, 10-bit ADCs (10-bit performance and maximum sample rate of under 15kHz, making it unsuitable for digitizing audio or video. IPR2025-00230, Ex-2115; IPR2025-00232, Ex-2048. The 68HC11G is not capable of managing the interaction of the components of unit 300 in the

manner taught by Strub and is wholly incapable of processing a single real-time, live video feed due to, at a minimum, its limited clock speed and RAM, never mind processing multiple feeds from multiple recording units as suggested by Petitioners. At best, it could display simple text and characters. The 68HC11G cannot receive and process real time A/V data from video data acquisition device 302 or receiver 310 nor can it transmit such data to video recording display device 306, transmitter 309, data processing device 304, or data storage device 305, as taught by Strub in Fig. 3.

302. The 68HC11G specifications confirm this impossibility. The singular 2MHz data port makes it incapable of transferring real time audio or visual data between devices, while the sub 15kHz sample rate makes it insufficient to digitize the real time audio or visual data. Strub fails to address the control protocols for each of the devices, thus the serial data port would need to reset for each of the individual devices that is required to manage and mediate.

303. In this non-working embodiment taught by Strub, device 302 is taught to be a Super Circuits PC-17YC CCTV video camera (Ex-1003, 28:64-29:4). Any POSA knows in order to digitize composite video, a device must sample at multi-MHz rates (e.g., video luminance/bandwidth is approximately 4 MHz for PAL/NTSC subcarriers and typical composite bandwidths), in addition

to parsing sync, lines, frames, color demodulation, and heavy per-pixel processing. The 68HC11G's bus/E-clock is nominally 2.1 MHz, and the on-chip ADC is a 10-bit SAR type with conversion times on the order of tens of E-clock cycles — meaning practical A/D throughput is in the tens of kHz at best, far below the multi-MHz sampling needed for video. The 68HC11G lacks dedicated video-decode hardware, lacks modern DMA to stream high-rate samples to memory, and its instruction throughput (2.1 MHz CPU, multi-cycle instructions) gives only a few hundred cycles in the time of a single video line — nowhere near what's needed to capture/decode pixels in real time. The 68HC11G is designed for control/low-speed I/O and analog measurement, not raster video capture. Even if modifications could be made to allow the 68HC11G to sample a line of video, storing raw video frames requires megabytes per second for useful resolution — the 68HC11G lacks the RAM and high-speed bus/host storage interfaces to handle that throughput. The 68HC11G is unsuitable for use in unit 300. Further, NTSC transmission only works for fixed installations in which antennas can be pointed in the best orientation to receive a coherent picture, which is not possible in a moving device.

304. Strub teaches that the 68HC11G could simultaneously manage the various subsystems in real time, including gathering auxiliary data, providing

frame accurate time stamps, incorporating the auxiliary data with the video and audio data, responding to the requests of the recorder, synchronizing the audio data with the visual data, managing the overall power supply level, managing the transfer of data between devices, providing status updated to the recorder, controlling the starting and stopping of the recordings, specifying the signals, controlling the playback of the monitor, managing the processing of audio, managing the data processing device, monitoring the status of the devices, and managing the data storage. Ex-1003, 14:1-13. The above combination of the tasks are far beyond the capability of the 68HC11G.

305. EEPROM is smaller than flash drive memory (“FDM”), and the largest FDM available in April of 2000 was 16MB, meaning that 384 - 576 flash drives would be required to implement 6-9 GB of data storage. The large quantity of flash drives required by a Strub unit makes it an impossible solution to implement in a battery-powered, portable device, able to fit in a backpack.

306. Strub teaches an alternative data storage device - a Barracuda hard disk having part no. ST 39173-N (“ST39173”). Ex-1003, 34:48-54. The ST39173 is a 3.5-inch desktop/server hard drive with non-shock resistant spinning platters and read/write heads, with an operating shock tolerance of approximately 10 g, a 5V/12V power requirement, and is intended for installation in a chassis with proper cooling for a 3.5-inch SCSI drive. IPR2025-

00230, Ex-2116; IPR2025-00232, Ex-2051. The ST39173 was not designed for battery power or portability, and requires airflow for cooling (IPR2025-00230, Ex-2116, p. 41; IPR2025-00232, Ex-2051, p. 41). The ST39173 is not designed to operate from inside a backpack and it is not suitable for wearability, particularly in activities such as “hiking, snow skiing or ping pong.” Ex-1003, 67:59-61.

307. The nature of Strub’s invention as described in the Petition is a battery-powered, low-attention, portable recording unit that has the ability to: 1) record audio/video data; 2) simultaneously receive audio/video data from four other recording units simultaneously; 3) simultaneously transmit audio/video data in real time to another recording unit; 4) display audio and video data separately on two screens (i.e., devices 306 and 307 of Strub Fig. 3); 5) receive GPS timecode data from a GPS satellite; and 6) stamp audio/video data with a timecode (the “Strub Features”).

308. Strub also teaches that data processing device 304 can be a Recon-11. Ex-1003, 29:44-46. The operation and integration of the Recon-11 requires a lot of engineering that a POSA would not be able to complete. The Recon-11 power bus is 16-bit, while the 68HC11G is 8-bit, thus they are not compatible. Finally, the Recon-11 only accepted coaxial video input (IPR2025-00230, Ex-2118; IPR2025-00232, Ex-2035), which the 68HC11G could neither generate

nor process, rendering the depiction of same in Fig. 3 technically infeasible.

309. [Reserved]

310. Strub's further assertion that "recording data ... can first be processed (e.g., compressed) in the data processing device 304, then stored in the data storage device 305" (Ex-1003, 12:16-21) is inaccurate as the 68HC11G has no ability to read the data and transfer it to data storage device 305 for the reasons described above.

311. Likewise, the cited Casio VM-150 purported to be an acceptable video recording display device 306 (Ex-1003, 45:15) accepts an RGB interface input, which is incompatible for direct connection to the 68HC11G, again contradicting FIG. 3.

312. The Strub system is a multi-disciplinary system, wherein each field (e.g., A/V streaming, A/V recording, GPS satellite reception, RF transmission) is known to be unpredictable, particularly when integrated into a single, portable, battery powered unit capable of fitting in a backpack. As of April 2000, each of the distinct technologies were independently evolving, and integrating them into a single, battery powered unit would have been far beyond the state of the art, particularly considering the power concerns discussed in the Patent Owner Response § IX.A.ii.

313. Strub lists a variety of camcorders that "can be used to construct a

hybrid recording unit according to the invention” (Ex-1003, 75:51-53), e.g., a Sony DCR DVR 900. The DVR 900 was only capable of recording A/V data and displaying it on one screen, with none of the other Strub Features. In 2000, there was no mainstream, portable, battery-powered device that combined A/V recording, wireless transmission of A/V data, and wireless reception of A/V data in a single, battery powered unit.

314. The first battery powered streaming camcorder (the JVC GY-DV300 “Streamcorder”) was not introduced until 2002, two years after Strub was filed. Although it could technically stream audiovisual data while operating on battery power, such operations severely limited the battery time (a 30% decrease) and it was often used on mains power for such features. IPR2025-00230, Ex-2137, p. 8; IPR2025-00232, Ex-2046, p. 8. Even compact, battery-powered camcorders with built-in audiovisual streaming (transmission) capability weren’t majorly released until 2010. IPR2025-00230, Exs-2123, 2138; IPR2025-00232, Exs-2052, 2053.

315. In April 2000, even professional camcorders could not wirelessly transmit audiovisual data. These camcorders were *hardwired* to an external wireless transmitter, separate from the camcorder, that were typically mounted on a rig or belt, not integrated into a camera. *See*, e.g., IPR2025-00230, Ex-2139, p. 7; IPR2025-00232, Ex-2047, p. 7. Typical transmitters were roughly

200x150x40 mm (7.9x5.9x1.5 inches) and required dedicated battery packs and cables to connect to the camera. Consumer camcorders required hardwired links to external devices for streaming; DVRs with wireless streaming did not appear until at least 2010, and fully integrated, battery-powered streaming units were only available around 2014. *See, e.g.,* IPR2025-00230, 2123; Ex-IPR2025-00232, Ex-2053. Nonetheless, Strub completely fails to mention how to invent these subsystems almost a decade prior. In fact, if Strub did invent these aforementioned devices, Henry B. Strub would be a known household name.

316. Strub will have you believe that putting all of the Strub features into one “small, lightweight, wearable recording unit” (Ex-1003, 4:21-31) was within the ordinary skill of a POSA. Such an assertion is just not credible in light of the state of the art in April 2000. There was no reason for manufacturers such as JVC and Sony to delay implementation of these features. And, even in 2000, JVC recognized the battery power limitations of a unit that only implemented two and a half (it could display to one screen but not two) of the Strub Features. IPR2025-00230, Ex-2137, p. 7; IPR2025-00232, Ex-2046, p. 7.

317. Strub teaches mains-powered DSP. However, in 2000, real-time beamforming demanded special, mains-powered DSP hardware, which was only found in research environments, not in portable battery-powered devices.

318. Similarly, Strub teaches picture in picture (“PIP”) display (Ex-

1003, 44:55-58), yet the first battery-powered PIP camcorder device did not appear until after 2010. IPR2025-00230, Ex-2124; IPR2025-00232, Ex-2056. A POSA in 2000 would have no practical way to realize a feature in the claimed unit, especially without undue experimentation.

319. Strub teaches that “power may be transmitted – preferably in a wireless manner – from a fixed power supply that is separate from the recorder, so that the recording unit receives adequate power for operation so long as the recording unit remains within a defined area...” Ex-1003, 12:60-65. Wireless transmission of power for Strub’s units could not be done then and cannot be done today.

320. Given this state of the prior art, a POSA attempting to follow Strub’s disclosure in 2000 would have faced unsolvable engineering challenges on multiple fronts. This level of unpredictability shows that Strub’s specification is not enabling under at least Wands Factors 4, 5, and 7.

I hereby declare under penalty of perjury that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true. I understand that willfully false statements and the like are punishable by fine, imprisonment, or both under 18 U.S.C. § 1001.

Executed on Sept 8, 2025, in Los Angeles, CA.

By: James M. DeFilippis
James DeFilippis