

Exhibit 025-04: U.S. Patent Application Publication No. 2007/0055399 (“Litback”)

U.S. Patent Appl. Pub. No. 2007/0055399 (“Litback”) was filed on June 1, 2006 and published on March 8, 2007. Litback constitutes prior art to U.S. Patent No. 10,966,025 (the “’025 patent”) under at least pre-35 U.S.C. §§ 102(a), (b), and (e).

Litback, including any material incorporated by reference into Litback, anticipates claims 1, 10, 12, 13, and 18 (“asserted claims”) of the ’025 patent under at least 35 U.S.C. §§ 102(a), (b), and (e).

To the extent any limitation is found not to be expressly or inherently disclosed in Litback, such a limitation would have been obvious either based on Litback alone, given the state of the art, or in combination with one or more of the references cited in Exhibits 025-01 through 025-06 or Exhibit 025-B, because the ’025 patent is merely a collection of prior art elements that fails to meet the statutory requirement of non-obviousness under 35 U.S.C. § 103, and the factors delineated in *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), weigh against a finding of non-obviousness.

Any disclosures identified for each limitation of the ’025 patent in the aforementioned Exhibits may be combined with the disclosures of Litback identified below for the same limitation to render that limitation obvious. A POSITA would have found such a combination/modification obvious for the reasons discussed herein and in Defendant’s cover pleading.¹

The citations to portions of any reference in this chart are exemplary only. Citations to the written description should be interpreted to include the figures associated with or relevant to the cited passages. Similarly, citations to a figure should be understood to encompass any description, text, or discussion of that figure. Defendant reserves the right to use the entirety of any reference cited in this chart to show that the asserted claims are anticipated and/or are obvious. Citations presented for one claim limitation are expressly incorporated by reference into all other limitations for that claim as well as all limitations of all claims on which that claim depends.

¹ Plaintiff appears in many instances to be pursuing overly broad constructions of limitations of the asserted claims in an effort to piece together an infringement claim where none exists. This claim chart accounts for overly broad construction of the claim limitations. Any assertion that a particular limitation is disclosed by a prior art reference or references may be based on Plaintiff’s apparent constructions and is not intended to be, and is not, an admission that such constructions are supportable or proper. Defendant is investigating this prior art and has not yet completed discovery from third parties, who may have relevant information concerning the prior art. Therefore, Defendant reserves the right to supplement this chart after additional discovery is received. To the extent that any of the prior art discloses the same or similar functionality or feature(s) of any of the accused products, Defendant reserves the right to argue that said feature or functionality does not practice any limitation of any of the asserted claims, and to argue, in the alternative, that if said feature or functionality is found to practice any limitation of any of the asserted claims, then the prior art reference teaches the limitation and that the claim is not patentable.

Exhibit 025-04: U.S. Patent Application Publication No. 2007/0055399 (“Litback”)

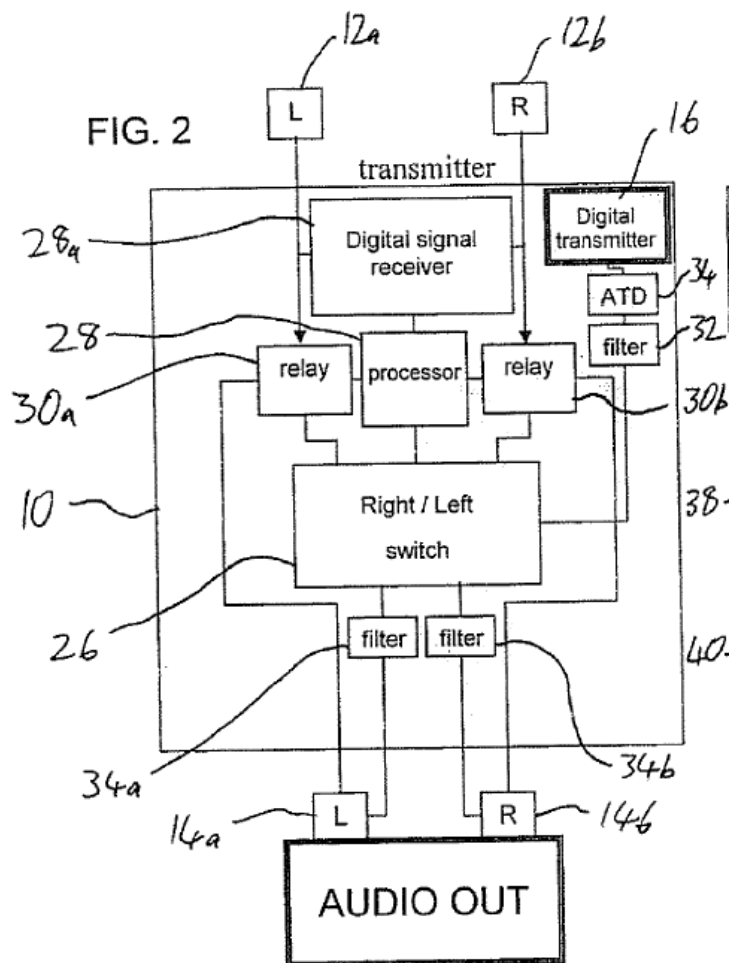
Defendant reserves the right to rely on additional citations or sources of evidence that also may be applicable, or that may become applicable in light of claim construction, changes in Plaintiff’s infringement contentions, and/or information obtained during discovery as the case progresses.

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1[pre] A playback device comprising:

Defendant does not concede that the preamble is limiting. To the extent it is limiting, Litback discloses the preamble. For example, Litback discloses preamble. *See, e.g.*, the following:

FIG. 2:



[0031]: The present invention is an audio switching system for providing an audio signal selectively to an audio output and to a remote puppet.
0032.

[0033]: Referring now to the drawings, FIGS. 1A and 1B illustrate schematically the underlying principle of the present invention. Specifically, FIGS. 1A and 1B show a Switching arrangement 10, constructed and operative

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according to the teachings of the present invention, deployed between audio inputs 12a, 12b and audio outputs 14a, 14b.

See also claim 1.

The devices disclosed in Litback are a playback device configured to output audio in a multi-channel listening environment, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 1[pre].

To the extent that Litback is found not to disclose the preamble, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant’s cover pleading.

1[a] a network interface configured to receive audio data over a network:

Litback discloses this feature. *See, e.g.*, the following:

[0033]: Referring now to the drawings, FIGS. 1A and 1B illustrate schematically the underlying principle of the present invention. Specifically, FIGS. 1A and 1B show a Switching arrangement 10, constructed and operative according to the teachings of the present invention, deployed between audio inputs 12a, 12b and audio outputs 14a, 14b. In a first state as illustrated in FIG. 1A, Switching arrangement 10 transferS audio signals from each audio input 12a, 12b to the corresponding audio output 14a, 14b. In a second state as illustrated in FIG. 1B, audio signals from one of the audio inputs 12a are redirected to a transmitter 16 for transmission to a remote puppet (to be described below). Most preferably, audio signals from the second audio input 12b are split to provide split mono audio to both audio outputs 14a, 14b.

[0037]: Since the only modification of the audio tracks beyond the audio content itself is selective addition of a non-intrusive actuation signal (e.g., near or slightly beyond the upper or lower extreme of the audible frequency range so as to be inaudible to many users, and/or of brief duration), playing of the content on a conventional entertainment system (without the Switch ing arrangement) would result in an acceptable play back effect with the puppet audio being played via one speaker of the entertainment system. It is therefore feasible to broadcast programming Suitable for the system on public broadcast networks for which not all users are equipped with the system.

[0046]: Turning now to FIG. 2, this illustrates a preferred implementation of the system of the present invention in more detail. In addition to Switching arrangement 10, the system also shows a puppet 18 which includes a receiver 20

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for receiving a wireless signal from transmitter 16, an amplifier 22 for amplifying audio content derived from the wireless signal, and a speaker 24 for outputting the audio content.

See also claim 1.

Alternatively, it would have been obvious to modify Litback to include a network interface configured to receive audio data over a network, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 1[a].

To the extent that Litback is found not to disclose this feature, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant’s cover pleading.

1[b] one or more speaker drivers configured to output audio based on the audio data:

Litback discloses this feature. *See, e.g.*, the following:

[0047]: Switching arrangement 10 includes an electronic switch 26 electrically switchable between a straight-through state, wherein the audio signals from audio inputs 12a, 12b are transferred to corresponding audio outputs 14a, 14b, and a diverted State, wherein the audio signal from one of audio inputs 12a, 12b is transferred to transmitter 16 for transmitting to puppet 18. By way of a non-limiting preferred example, the invention is illustrated here with a signal processor 28 is configured to be responsive to a predefined actuation signal in a range of frequencies between about 15 kHz and about 20 kHz Superimposed on the audio signal as part of the electrical signal from the audio input 12a or 12b to switch the electronic switch from the straight-through state to the diverted state. The modifications required for an alternative implementation of the present invention using one of the other types of non-intrusive actuation signal mentioned above will be self-evident to one ordinarily skilled in the art.

[0061]: At this stage, the operation of Switching arrangement 10 and puppet 18 will be clearly understood. On receipt of electrical signals from audio inputs 12a and 12b, digital signal receiver 28a monitors for the predefined actuation signal. When no actuation signal is detected, processor 28 leaves relays 30a and 30b de-energized so that inputs 12a, 12b are directly connected to audio outputs 14a, 14b as if the Switching arrangement was not present. When an actuation signal is detected, it’s digital content is retrieved and transferred to processor 28. Processor 28 then actuates relays 30a and 30b so as to connect the inputs to the

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electronic switch 26 and sets the state of the Switch according to the content and source channel of the actuation signal. If a first predefined code is received, electronic switch 26 maintains the “straight-through connection with the output again being directed to audio outputs 14a. 14b. If a second predefined code is received, the corresponding channel is diverted to filter 32, ATD 34 and then transmitted via transmitter 16 to receiver 20 for playing via DTA 36, amplifier 22 and speaker 24. The non-diverted channel is then split and output to both audio outputs 14a. 14b.

See also claim 1.

Alternatively, it would have been obvious to modify Litback to include a one or more speaker drivers configured to output audio based on the audio data, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 1[b].

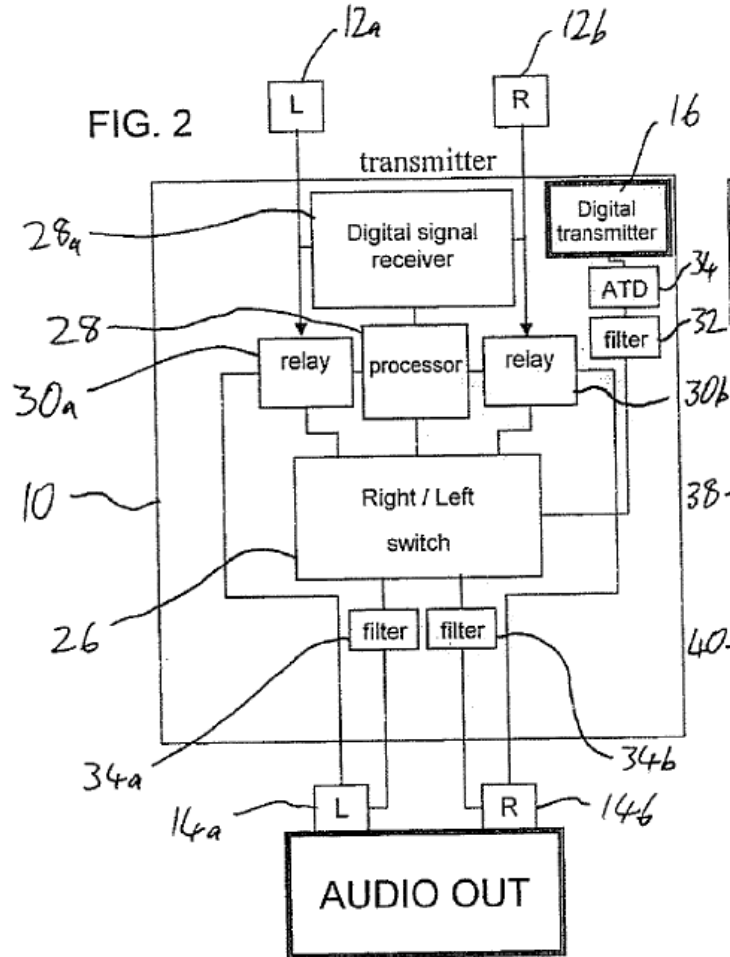
To the extent that Litback is found not to disclose this feature, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant’s cover pleading.

1[c] one or more processors tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the instructions, when executed by the one or more processors, cause the playback device to:

Litback discloses this feature. *See, e.g.*, the following:

FIG. 2:

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[0059]: Turning now to the remaining features of switching arrangement 10, transmitter 16 is preferably a digital transmitter and receiver 20 is correspondingly a digital receiver, thereby offering considerable immunity to household electromagnetic interference. To enable digital transmission, Switching arrangement 10 includes an analogue-to-digital converter ("ATD") 34. Similarly, in preparation for amplification of the Sound output, puppet 18 includes a processor 38 which passes the digital Sound signals to a digital-to-analogue converter ("DTA") 36. All of these components are standard items, similar to those used in many cordless telephones and other common wireless household communication systems.

[0060]: As a further optional feature, puppet 18 as shown here includes an amplifier 40 and mouth motor 42 which receive an output from processor 38 and operate together to actuate movement of a mouth of the puppet as a function of

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the presence, volume level or other parameters derived from the audio signal. Clearly, actuators (not shown) may additionally or alternatively be provided to generate other types of movement of the puppet in response to the received audio signal or according to additional control signals transmitted to the puppet.

[0061]: At this stage, the operation of Switching arrangement 10 and puppet 18 will be clearly understood. On receipt of electrical signals from audio inputs 12a and 12b, digital signal receiver 28a monitors for the predefined actuation signal. When no actuation signal is detected, processor 28 leaves relays 30a and 30b de-energized so that inputs 12a, 12b are directly connected to audio outputs 14a, 14b as if the Switching arrangement was not present. When an actuation signal is detected, its digital content is retrieved and transferred to processor 28. Processor 28 then actuates relays 30a and 30b so as to connect the inputs to the electronic switch 26 and sets the state of the Switch according to the content and source channel of the actuation signal. If a first predefined code is received, electronic switch 26 maintains the “straight-through connection with the output again being directed to audio outputs 14a, 14b. If a second predefined code is received, the corresponding channel is diverted to filter 32, ATD 34 and then transmitted via transmitter 16 to receiver 20 for playing via DTA 36, amplifier 22 and speaker 24. The non-diverted channel is then split and output to both audio outputs 14a, 14b.

See also claim 1.

Alternatively, it would have been obvious to modify Litback to include one or more processors tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the instructions, when executed by the one or more processors, cause the playback device, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 1[c].

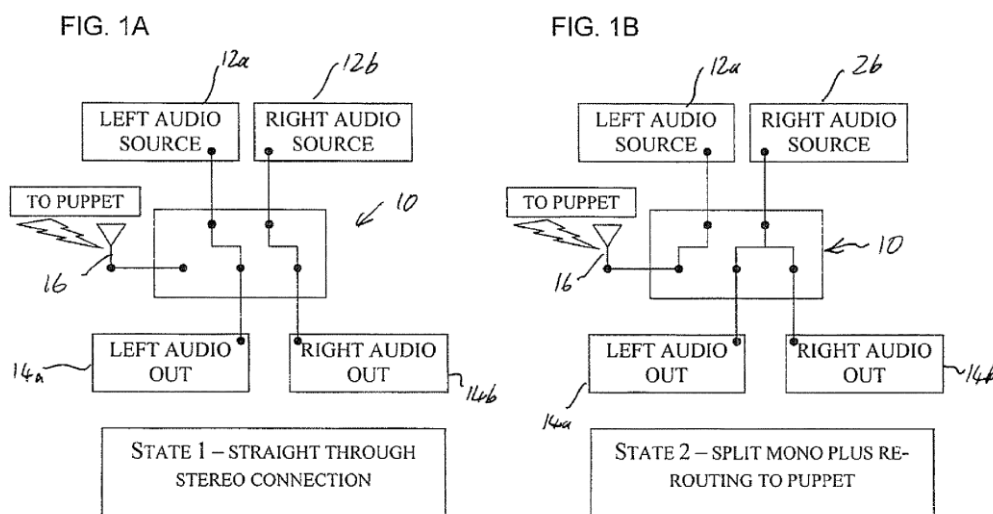
To the extent that Litback is found not to disclose this feature, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant’s cover pleading.

1[d] receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles:

Litback discloses this feature. *See, e.g.*, the following:

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FIGS. 1A and 1B:



[0033]: Referring now to the drawings, FIGS. 1A and 1B illustrate schematically the underlying principle of the present invention. Specifically, FIGS. 1A and 1B show a Switching arrangement 10, constructed and operative according to the teachings of the present invention, deployed between audio inputs 12a, 12b and audio outputs 14a, 14b. In a first state as illustrated in FIG. 1A, Switching arrangement 10 transfers audio signals from each audio input 12a, 12b to the corresponding audio output 14a, 14b. In a second state as illustrated in FIG. 1B, audio signals from one of the audio inputs 12a are redirected to a transmitter 16 for transmission to a remote puppet (to be described below). Most preferably, audio signals from the second audio input 12b are split to provide split mono audio to both audio outputs 14a, 14b.

[0034]: Switching between the two states of FIGS. 1A and 1B is preferably performed dynamically during the programming on the basis of an actuation signal added to the audio channel for signaling the Switching between modes. The actuation signal is chosen to be non-intrusive to the audio experience of most users, even if played via regular audio equipment. In certain cases, particularly where frequencies near or beyond the upper range of the audible frequency range are used, the actuation signal may be removable by simple filtering techniques with minimal impact on the quality of the audio content itself. At the same time, the actuation signal is chosen to be in the range of frequencies which are reliably reproduced by the sound recording and transmission techniques in common usage in audio and audio-visual entertainment systems, thereby allowing the actuation system to be added to the Soundtrack of given programming without requiring any modification of the storage format or any other system hardware.

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[0047]: Switching arrangement 10 includes an electronic switch 26 electrically switchable between a straight-through state, wherein the audio signals from audio inputs 12a, 12b are transferred to corresponding audio outputs 14a, 14b, and a diverted State, wherein the audio signal from one of audio inputs 12a, 12b is transferred to transmitter 16 for transmitting to puppet 18. By way of a non-limiting preferred example, the invention is illustrated here with a signal processor 28 is configured to be responsive to a predefined actuation signal in a range of frequencies between about 15 kHz and about 20 kHz Superimposed on the audio signal as part of the electrical signal from the audio input 12a or 12b to switch the electronic switch from the straight-through state to the diverted state. The modifications required for an alternative implementation of the present invention using one of the other types of non-intrusive actuation signal mentioned above will be self-evident to one ordinarily skilled in the art.

[0055]: Relays 30a and 30b are actuated by signal processor 28 so as to connect the inputs to electronic Switch 26 while an actuation signal is sensed (indicative of either the straight-through or diverted switching state)[.]

See also claim 1.

Alternatively, it would have been obvious to modify Litback to include receiv[ing] a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 1[d].

Litback alone renders this limitation obvious. At the time of the alleged invention, it was well known that a playback device could receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles—depending on its relationship with other playback devices. The known benefits for this type of configuration included enhanced listening experience and flexibility. In terms of the listening experience, a user could achieve multi-channel sound from a single device, while using the same device as part of a larger stereo or home theater configuration. In terms of flexibility, the user could expand his or her network of playback devices to accommodate different settings. *See* Hull et al., Building Hi-Fi Speaker Systems, Philips Application Book (“Philips”) (GOOG-SONOSITC-PA-00018241) at 8-10; Kraemer, Two Speakers are Better than 5.1, IEEE Spectrum (GOOG-SONOSITC-PA-00020200). Programming a playback device to determine a type of pairing and configure its audio output based on the type of

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pairing would have been a routine modification that a person of ordinary skill in the art would have been able to implement with a reasonable expectation of success. Configuring a playback device to process and output one or more specific audio channels would require nothing more than basic programming logic and hardware to receive a signal from a controller over the network, pair, and select one or more channels as disclosed in chipsets like the BridgeCo wireless loudspeaker solution.

Litback in combination with Rocketfish renders this limitation obvious. Rocketfish discloses a playback device that operates in a non-paired configuration in which it outputs two-channel sound (left and right), as well as a stereo-pair configuration in which it outputs no more than one channel of the two-channel sound (left or right). *See* Rocketfish User Manual at 24. A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Rocketfish. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles.

Litback in combination with Bryce renders this limitation obvious. Bryce discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Bryce at 4:23-31 (“A wireless audio system includes one or more wireless speaker subsystems. In a simple example, a wireless audio system includes a group of wireless speaker subsystems arranged throughout a room, and configured to playback the same audio in synchronicity. In a more complex example each wireless speaker subsystem's playback is defined by a role for that wireless speaker subsystem—for example in the context of a stereo configuration, or a five-channel surround sound configuration, or some other surround sound configuration.”). Bryce further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* at 9:14-58. A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Bryce, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success

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implementing the combination because it would require nothing more than basic programming logic and hardware to receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles.

Litback in combination with Holmgren renders this limitation obvious. Holmgren discloses different pairing configurations, including configurations where a playback device outputs one channel or two-channel sound depending on whether it is paired with a subwoofer. *See* Holmgren at 6:45-56 (“In the case where the audio sources lack of the subwoofer channel effect, the process 300 goes on to determine the output speaker configuration, especially the presence or absence of a subwoofer at 312.”). A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Holmgren, including a two-channel configuration that includes a bass channel. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles.

Litback in combination with McCarty renders this limitation obvious. McCarty discloses different pairing configurations, including stereo and surround sound configurations. *See* McCarty at 9:11-26: (“Depending on the audio channel format(s) available from the input source 102, the audio module 110 processes the audio signal 108 into the selected channel configuration. Exemplary channel configurations include Dolby Digital, DTS, SRS and others. These channel configurations may include, for example, stereo, 2.1, 3.1, 5.1, 6.1, 7.1 and the like.”). McCarty further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* at 9:27-45, 11:10-35. A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in McCarty, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than

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basic programming logic and hardware to receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles.

Litback in combination with Kraemer renders this limitation obvious. Kraemer explains that two speakers can be configured to produce various different pairing configurations, including stereo and surround sound configurations. *See* Kraemer at 4, 6 (““Under the right conditions, multichannel virtualizers score on two counts. They need only two speakers to create an experience superior to that of standard multispeaker surround systems.”). A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Kraemer, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles.

Litback in combination with Howard renders this limitation obvious. Howard discloses different pairing configurations, including those where different drivers are disabled in order to output one-channel and two-channel sound. *See* Howard at [0058]-[0060]. Howard further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Howard, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles.

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Litback in combination with Isely renders this limitation obvious. Isely discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Isely at [0005], [0037]-[0042]. Isely further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Isely, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles.

Litback in combination with Fincham renders this limitation obvious. Fincham discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Fincham at 7:50-60 (“FIG. 12 is a simplified diagram conceptually illustrating playback of a 5.1 Surround format Soundtrack in the Sound system 600 of FIG. 6, when the sound system 600 is configured to apply the Surround left and right channel audio signals 1211, 1212 to the rear surround speakers 1224, 1125. As illustrated in FIG. 12, when the surround left and right channel audio signals 1211, 1212 are monaural, adaptive de-correlation processing (as represented by blocks 1271 and 1272) is activated, and when they are stereo in nature, adaptive sound processing for the rear surround speakers 1224, 1225 (as represented by block 1201) is activated.”); 8:11-39 (“FIG. 8 is a generalized block diagram of a Sound processing system 800 in accordance with one embodiment as disclosed herein, as may be used, for example, in connection with the speaker configuration illustrated in FIG. 6, or more generally, in any Sound system which utilizes multiple audio channels to provide Stereo source signals. As shown in FIG. 8, a left audio signal 811 and right audio signal 812 are provided to a sound processor 810, and then to a pair of closely spaced speakers 824, 825. The left audio signal 811 and right audio signal 812 may also be provided to left and right side (surround or non surround) speakers, not shown in FIG. 8. In a preferred embodiment, the sound processor 810 acts to “spread the Sound image produced by the two closely spaced speakers 824, 825 by employing a cross-cancellation technique wherein a cancellation signal is derived, for example, from the difference between the left and right audio signals 811, 812.

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The resulting difference signal is scaled, delayed (if necessary) and spectrally modified before being added to the left channel and, in opposite polarity, to the right channel. The spectral modification to the difference channel preferably takes the form of a low-frequency boost over a specified frequency range, in order to restore the correct timbral balance after the differencing process which causes a loss of bass when the low-frequency signals in each channel are similar. The effect of the sound processor 810 is to enlarge the perceived area and Stability of the Sound image produced by the speakers 324, 325, and provide an effect of stereo sound despite the close proximity of the speakers 324,325.”). A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Fincham, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles.

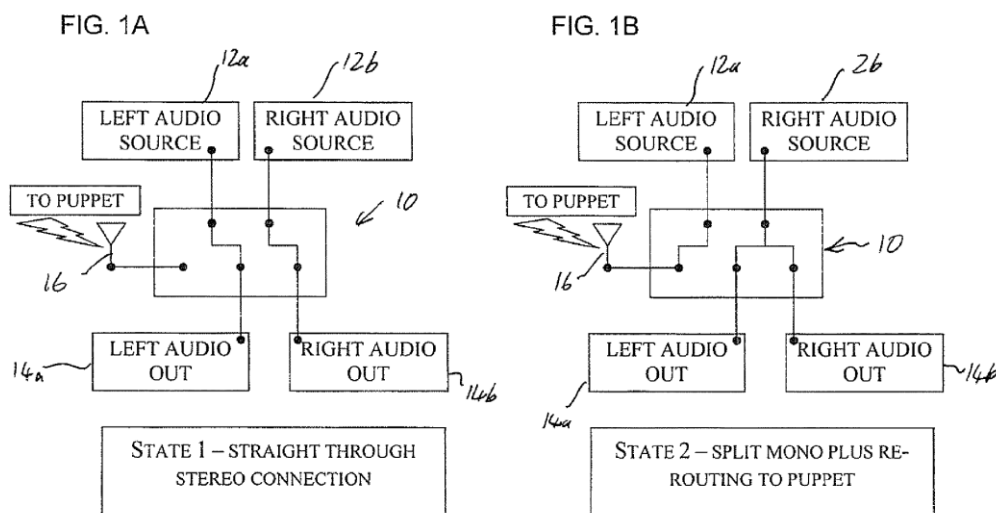
To the extent that Litback is found not to disclose this feature, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant’s cover pleading.

1[e] (i) determine that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback device is paired with the one or more other playback devices such that the playback device and the one or more other playback devices have the different playback roles:

Litback discloses this feature. *See, e.g.*, the following:

FIGS. 1A and 1B:

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[0033]: Referring now to the drawings, FIGS. 1A and 1B illustrate schematically the underlying principle of the present invention. Specifically, FIGS. 1A and 1B show a Switching arrangement 10, constructed and operative according to the teachings of the present invention, deployed between audio inputs 12a, 12b and audio outputs 14a, 14b. In a first state as illustrated in FIG. 1A, Switching arrangement 10 transfers audio signals from each audio input 12a, 12b to the corresponding audio output 14a, 14b. In a second state as illustrated in FIG. 1B, audio signals from one of the audio inputs 12a are redirected to a transmitter 16 for transmission to a remote puppet (to be described below). Most preferably, audio signals from the second audio input 12b are split to provide split mono audio to both audio outputs 14a, 14b.

[0034]: Switching between the two states of FIGS. 1A and 1B is preferably performed dynamically during the programming on the basis of an actuation signal added to the audio channel for signaling the Switching between modes. The actuation signal is chosen to be non-intrusive to the audio experience of most users, even if played via regular audio equipment. In certain cases, particularly where frequencies near or beyond the upper range of the audible frequency range are used, the actuation signal may be removable by simple filtering techniques with minimal impact on the quality of the audio content itself. At the same time, the actuation signal is chosen to be in the range of frequencies which are reliably reproduced by the sound recording and transmission techniques in common usage in audio and audio-visual entertainment systems, thereby allowing the actuation system to be added to the Soundtrack of given programming without requiring any modification of the storage format or any other system hardware.

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[0047]: Switching arrangement 10 includes an electronic switch 26 electrically switchable between a straight-through state, wherein the audio signals from audio inputs 12a, 12b are transferred to corresponding audio outputs 14a, 14b, and a diverted State, wherein the audio signal from one of audio inputs 12a, 12b is transferred to transmitter 16 for transmitting to puppet 18. By way of a non-limiting preferred example, the invention is illustrated here with a signal processor 28 is configured to be responsive to a predefined actuation signal in a range of frequencies between about 15 kHz and about 20 kHz Superimposed on the audio signal as part of the electrical signal from the audio input 12a or 12b to switch the electronic switch from the straight-through state to the diverted state. The modifications required for an alternative implementation of the present invention using one of the other types of non-intrusive actuation signal mentioned above will be self-evident to one ordinarily skilled in the art.

[0055]: Relays 30a and 30b are actuated by signal processor 28 so as to connect the inputs to electronic Switch 26 while an actuation signal is sensed (indicative of either the straight-through or diverted switching state)[.]

See also claim 1.

Alternatively, it would have been obvious to modify Litback to include determin[ing] that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback device is paired with the one or more other playback devices such that the playback device and the one or more other playback devices have the different playback roles, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 1[e].

Litback alone renders this limitation obvious. At the time of the alleged invention, it was well known that a playback device could be configured to output different audio—including different channels of audio—depending on its relationship with other playback devices. The known benefits for this type of configuration included enhanced listening experience and flexibility. In terms of the listening experience, a user could achieve multi-channel sound from a single device, while using the same device as part of a larger stereo or home theater configuration. In terms of flexibility, the user could expand his or her network of playback devices to accommodate different settings. *See* Hull et al., Building Hi-Fi Speaker Systems, Philips Application Book (“Philips”) (GOOG-SONOSITC-PA-00018241) at 8-10; Kraemer, Two Speakers are Better than 5.1, IEEE Spectrum (GOOG-SONOSITC-PA-00020200). Programming a playback device to determine a type of pairing and configure its audio output based on the type of pairing would have been a routine modification that a person of ordinary skill in the art would have been able to implement with a reasonable expectation of success. Configuring a playback device to process and output one or more

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specific audio channels would require nothing more than basic programming logic and hardware to process a pairing command and select one or more channels as disclosed in chipsets like the BridgeCo wireless loudspeaker solution.

Litback in combination with Rocketfish renders this limitation obvious. Rocketfish discloses a playback device that operates in a non-paired configuration in which it outputs two-channel sound (left and right), as well as a stereo-pair configuration in which it outputs no more than one channel of the two-channel sound (left or right). *See* Rocketfish User Manual at 24. A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Rocketfish. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to determine that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback device is paired with the one or more other playback devices such that the playback device and the one or more other playback devices have the different playback roles.

Litback in combination with Bryce renders this limitation obvious. Bryce discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Bryce at 4:23-31 (“A wireless audio system includes one or more wireless speaker subsystems. In a simple example, a wireless audio system includes a group of wireless speaker subsystems arranged throughout a room, and configured to playback the same audio in synchronicity. In a more complex example each wireless speaker subsystem's playback is defined by a role for that wireless speaker subsystem—for example in the context of a stereo configuration, or a five-channel surround sound configuration, or some other surround sound configuration.”). Bryce further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* at 9:14-58. A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Bryce, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to determine that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback

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device is paired with the one or more other playback devices such that the playback device and the one or more other playback devices have the different playback roles.

Litback in combination with Holmgren renders this limitation obvious. Holmgren discloses different pairing configurations, including configurations where a playback device outputs one channel or two-channel sound depending on whether it is paired with a subwoofer. *See* Holmgren at 6:45-56 (“In the case where the audio sources lack of the subwoofer channel effect, the process 300 goes on to determine the output speaker configuration, especially the presence or absence of a subwoofer at 312.”). A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Holmgren, including a two-channel configuration that includes a bass channel. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to determine that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback device is paired with the one or more other playback devices such that the playback device and the one or more other playback devices have the different playback roles.

Litback in combination with McCarty renders this limitation obvious. McCarty discloses different pairing configurations, including stereo and surround sound configurations. *See* McCarty at 9:11-26: (“Depending on the audio channel format(s) available from the input source 102, the audio module 110 processes the audio signal 108 into the selected channel configuration. Exemplary channel configurations include Dolby Digital, DTS, SRS and others. These channel configurations may include, for example, stereo, 2.1, 3.1, 5.1, 6.1, 7.1 and the like.”). McCarty further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* at 9:27-45, 11:10-35. A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in McCarty, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to determine that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback device is paired with the one or more other playback devices such that

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the playback device and the one or more other playback devices have the different playback roles.

Litback in combination with Kraemer renders this limitation obvious. Kraemer explains that two speakers can be configured to produce various different pairing configurations, including stereo and surround sound configurations. *See* Kraemer at 4, 6 (““Under the right conditions, multichannel virtualizers score on two counts. They need only two speakers to create an experience superior to that of standard multispeaker surround systems.””). A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Kraemer, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to determine that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback device is paired with the one or more other playback devices such that the playback device and the one or more other playback devices have the different playback roles.

Litback in combination with Howard renders this limitation obvious. Howard discloses different pairing configurations, including those where different drivers are disabled in order to output one-channel and two-channel sound. *See* Howard at [0058]-[0060]. Howard further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Howard, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to determine that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback device is paired with the one or more other playback devices such that the playback device and the one or more other playback devices have the different playback roles.

Litback in combination with Isely renders this limitation obvious. Isely discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Isely at [0005], [0037]-

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[0042]. Isely further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Isely, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to determine that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback device is paired with the one or more other playback devices such that the playback device and the one or more other playback devices have the different playback roles.

Litback in combination with Fincham renders this limitation obvious. Fincham discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Fincham at 7:50-60 (“FIG. 12 is a simplified diagram conceptually illustrating playback of a 5.1 Surround format Soundtrack in the Sound system 600 of FIG. 6, when the sound system 600 is configured to apply the Surround left and right channel audio signals 1211, 1212 to the rear surround speakers 1224, 1225. As illustrated in FIG. 12, when the surround left and right channel audio signals 1211, 1212 are monaural, adaptive de-correlation processing (as represented by blocks 1271 and 1272) is activated, and when they are stereo in nature, adaptive sound processing for the rear surround speakers 1224, 1225 (as represented by block 1201) is activated.”); 8:11-39 (“FIG. 8 is a generalized block diagram of a Sound processing system 800 in accordance with one embodiment as disclosed herein, as may be used, for example, in connection with the speaker configuration illustrated in FIG. 6, or more generally, in any Sound system which utilizes multiple audio channels to provide Stereo source signals. As shown in FIG. 8, a left audio signal 811 and right audio signal 812 are provided to a sound processor 810, and then to a pair of closely spaced speakers 824, 825. The left audio signal 811 and right audio signal 812 may also be provided to left and right side (surround or non surround) speakers, not shown in FIG. 8. In a preferred embodiment, the sound processor 810 acts to “spread the Sound image produced by the two closely spaced speakers 824, 825 by employing a cross-cancellation technique wherein a cancellation signal is derived, for example, from the difference between the left and right audio signals 811, 812. The resulting difference signal is scaled, delayed (if necessary) and spectrally modified before being added to the left channel and, in opposite polarity, to the right channel. The spectral modification to the difference channel preferably takes the form of a low-frequency boost over a specified frequency range, in order to restore the correct timbral balance after the differencing process which

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causes a loss of bass when the low-frequency signals in each channel are similar. The effect of the sound processor 810 is to enlarge the perceived area and Stability of the Sound image produced by the speakers 324, 325, and provide an effect of stereo sound despite the close proximity of the speakers 324,325.”). A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Fincham, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to determine that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback device is paired with the one or more other playback devices such that the playback device and the one or more other playback devices have the different playback roles To the extent that Litback is found not to disclose this feature, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant’s cover pleading.
1[f] (ii) configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices:
Litback discloses this feature. <i>See, e.g.</i>, the following: [0047]: Switching arrangement 10 includes an electronic switch 26 electrically switchable between a straight-through state, wherein the audio signals from audio inputs 12a, 12b are transferred to corresponding audio outputs 14a, 14b, and a diverted State, wherein the audio signal from one of audio inputs 12a, 12b is transferred to transmitter 16 for transmitting to puppet 18. By way of a non-limiting preferred example, the invention is illustrated here with a signal processor 28 is configured to be responsive to a predefined actuation signal in a range of frequencies between about 15 kHz and about 20 kHz Superimposed on the audio signal as part of the electrical signal from the audio input 12a or 12b to switch the electronic switch from the straight-through state to the diverted state. The modifications required for an alternative implementation of the present invention using one of the other types of non-intrusive actuation signal mentioned above will be self-evident to one ordinarily skilled in the art.

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[0055]: Referring still particularly to FIG. 2, switching arrangement 10 preferably further includes one or more electro-mechanical Switch, typically implemented as one or more relay 30a and 30b. These are deployed to as to selectively connect respective audio inputs 12a, 12b to electronic switch 26, or to bypass electronic switch 26, instead connecting the audio inputs directly to the corresponding audio outputs 14a. 14b. Relays 30a and 30b are actuated by signal processor 28 so as to connect the inputs to electronic Switch 26 while an actuation signal is sensed (indicative of either the straight-through or diverted switching state), and so as to bypass electronic Switch 26 when actuation signal is absent, thereby providing a direct electrical conductor connection between audio inputs 12a, 12b and audio outputs 14a. 14b. Although the “straight-through” Switching state of the electronic Switch typically has minimal impact on the Sound quality of the audio signals, the provision of relays to bypass all electronic components and give a wired connection between inputs and outputs ensures that even any slight degradation introduced by the electronic components is avoided during programming not intended for use with the interactive puppet.

[0057]: As mentioned before, the actuation signal is preferably chosen to be inherently non-intrusive to the hearing of the user, even when not removed from the output Soundtrack. In the particular example illustrated here of an actuation signal encoded in a frequency range above about 15 kHz, the actuation signal is easily removed by simple filtering techniques which do not significantly affect the audio output sound quality. This implementation of the present invention therefore preferably provides filtering to remove the relevant range of frequencies. . . . Also shown here are output filters 34a and 34b which remove the actuation signals from the output from electronic Switch 26 to audio outputs 14a and 14b. It will be noted that the positioning of the filters can vary. For example, the filters could be located between relays 30a, 30b and electronic switch 26. The filter on the puppet output could alternatively be located within the puppet 18.

See also claim 1.

Alternatively, it would have been obvious to modify Litback to include configur[ing] the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 1[f].

Litback alone renders this limitation obvious. At the time of the alleged invention, it was well known that a playback device could be configured to output different audio—including different channels of audio—depending on its

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relationship with other playback devices. The known benefits for this type of configuration included enhanced listening experience and flexibility. In terms of the listening experience, a user could achieve multi-channel sound from a single device, while using the same device as part of a larger stereo or home theater configuration. In terms of flexibility, the user could expand his or her network of playback devices to accommodate different settings. *See* Hull et al., Building Hi-Fi Speaker Systems, Philips Application Book (“Philips”) (GOOG-SONOSITC-PA-00018241) at 8-10; Kraemer, Two Speakers are Better than 5.1, IEEE Spectrum (GOOG-SONOSITC-PA-00020200). Programming a playback device to determine a type of pairing and configure its audio output based on the type of pairing would have been a routine modification that a person of ordinary skill in the art would have been able to implement with a reasonable expectation of success. Configuring a playback device to process and output one or more specific audio channels would require nothing more than basic programming logic and hardware to process a pairing command and select one or more channels as disclosed in chipsets like the BridgeCo wireless loudspeaker solution.

Litback in combination with Rocketfish renders this limitation obvious. Rocketfish discloses a playback device that operates in a non-paired configuration in which it outputs two-channel sound (left and right), as well as a stereo-pair configuration in which it outputs no more than one channel of the two-channel sound (left or right). *See* Rocketfish User Manual at 24. A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Rocketfish. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices

Litback in combination with Bryce renders this limitation obvious. Bryce discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Bryce at 4:23-31 (“A wireless audio system includes one or more wireless speaker subsystems. In a simple example, a wireless audio system includes a group of wireless speaker subsystems arranged throughout a room, and configured to playback the same audio in synchronicity. In a more complex example each wireless speaker subsystem's playback is defined by a role for that wireless speaker subsystem—

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for example in the context of a stereo configuration, or a five-channel surround sound configuration, or some other surround sound configuration.”). Bryce further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* at 9:14-58. A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Bryce, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices.

Litback in combination with Holmgren renders this limitation obvious. Holmgren discloses different pairing configurations, including configurations where a playback device outputs one channel or two-channel sound depending on whether it is paired with a subwoofer. *See Holmgren* at 6:45-56 (“In the case where the audio sources lack of the subwoofer channel effect, the process 300 goes on to determine the output speaker configuration, especially the presence or absence of a subwoofer at 312.”). A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Holmgren, including a two-channel configuration that includes a bass channel. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices.

Litback in combination with McCarty renders this limitation obvious. McCarty discloses different pairing configurations, including stereo and surround sound configurations. *See McCarty* at 9:11-26: (“Depending on the audio channel format(s) available from the input source 102, the audio module 110 processes the audio signal 108 into the selected channel configuration. Exemplary channel configurations include Dolby Digital, DTS, SRS and others. These channel configurations may include, for example, stereo, 2.1, 3.1, 5.1, 6.1, 7.1 and the like.”). Litback further discloses that each device is programmed to determine its pairing configuration and output specific audio channels

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accordingly. *See id.* at 9:27-45, 11:10-35. A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in McCarty, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices.

Litback in combination with Kraemer renders this limitation obvious. Kraemer explains that two speakers can be configured to produce various different pairing configurations, including stereo and surround sound configurations. *See* Kraemer at 4, 6 (““Under the right conditions, multichannel virtualizers score on two counts. They need only two speakers to create an experience superior to that of standard multispeaker surround systems.””). A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Kraemer, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices.

Litback in combination with Howard renders this limitation obvious. Howard discloses different pairing configurations, including those where different drivers are disabled in order to output one-channel and two-channel sound. *See* Howard at [0058]-[0060]. Howard further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Howard, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because

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it would require nothing more than basic programming logic and hardware to configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices.

Litback in combination with Isely renders this limitation obvious. Isely discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Isely at [0005], [0037]-[0042]. Isely further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Isely, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices.

Litback in combination with Fincham renders this limitation obvious. Fincham discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Fincham at 7:50-60 (“FIG. 12 is a simplified diagram conceptually illustrating playback of a 5.1 Surround format Soundtrack in the Sound system 600 of FIG. 6, when the sound system 600 is configured to apply the Surround left and right channel audio signals 1211, 1212 to the rear surround speakers 1224, 1125. As illustrated in FIG. 12, when the surround left and right channel audio signals 1211, 1212 are monaural, adaptive de-correlation processing (as represented by blocks 1271 and 1272) is activated, and when they are stereo in nature, adaptive sound processing for the rear surround speakers 1224, 1225 (as represented by block 1201) is activated.”); 8:11-39 (“FIG. 8 is a generalized block diagram of a Sound processing system 800 in accordance with one embodiment as disclosed herein, as may be used, for example, in connection with the speaker configuration illustrated in FIG. 6, or more generally, in any Sound system which utilizes multiple audio channels to provide Stereo source signals. As shown in FIG. 8, a left audio signal 811 and right audio signal 812 are provided to a sound processor 810, and then to a pair of closely spaced speakers 824,

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825. The left audio signal 811 and right audio signal 812 may also be provided to left and right side (surround or non surround) speakers, not shown in FIG. 8. In a preferred embodiment, the sound processor 810 acts to “spread the Sound image produced by the two closely spaced speakers 824, 825 by employing a cross-cancellation technique wherein a cancellation signal is derived, for example, from the difference between the left and right audio signals 811, 812. The resulting difference signal is scaled, delayed (if necessary) and spectrally modified before being added to the left channel and, in opposite polarity, to the right channel. The spectral modification to the difference channel preferably takes the form of a low-frequency boost over a specified frequency range, in order to restore the correct timbral balance after the differencing process which causes a loss of bass when the low-frequency signals in each channel are similar. The effect of the sound processor 810 is to enlarge the perceived area and Stability of the Sound image produced by the speakers 324, 325, and provide an effect of stereo sound despite the close proximity of the speakers 324,325.”). A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Fincham, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices.

To the extent that Litback is found not to disclose this feature, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant’s cover pleading.

1[g] (iii) change the configuration of the playback device by configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices:

Litback discloses this feature. *See, e.g.*, the following:

[0047]: Switching arrangement 10 includes an electronic switch 26 electrically switchable between a straight-through state, wherein the audio signals from audio inputs 12a, 12b are transferred to corresponding audio outputs 14a. 14b,

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and a diverted State, wherein the audio signal from one of audio inputs 12a, 12b is transferred to transmitter 16 for transmitting to puppet 18. By way of a non-limiting preferred example, the invention is illustrated here with a signal processor 28 is configured to be responsive to a predefined actuation signal in a range of frequencies between about 15 kHz and about 20 kHz Superimposed on the audio signal as part of the electrical signal from the audio input 12a or 12b to switch the electronic switch from the straight-through state to the diverted state. The modifications required for an alternative implementation of the present invention using one of the other types of non-intrusive actuation signal mentioned above will be self-evident to one ordinarily skilled in the art.

[0057]: As mentioned before, the actuation signal is preferably chosen to be inherently non-intrusive to the hearing of the user, even when not removed from the output Soundtrack. In the particular example illustrated here of an actuation signal encoded in a frequency range above about 15 kHz, the actuation signal is easily removed by simple filtering techniques which do not significantly affect the audio output sound quality. This implementation of the present invention therefore preferably provides filtering to remove the relevant range of frequencies. Thus, a filter 32 is preferably deployed for removing the actuation signal from the electronic signal prior to outputting of the audio signal via puppet 18. In the implementation illustrated here, filter 32 is deployed as part of Switching arrangement 10 interposed between electronic switch 26 and transmitter 16. Also shown here are output filters 34a and 34b which remove the actuation signals from the output from electronic Switch 26 to audio outputs 14a and 14b. It will be noted that the positioning of the filters can vary. For example, the filters could be located between relays 30a, 30b and electronic switch 26. The filter on the puppet output could alternatively be located within the puppet 18.

[0061]: At this stage, the operation of Switching arrangement 10 and puppet 18 will be clearly understood. On receipt of electrical signals from audio inputs 12a and 12b, digital signal receiver 28a monitors for the predefined actuation signal. When no actuation signal is detected, processor 28 leaves relays 30a and 30b de-energized so that inputs 12a, 12b are directly connected to audio outputs 14a, 14b as if the Switching arrangement was not present. When an actuation signal is detected, it's digital content is retrieved and transferred to processor 28. Processor 28 then actuates relays 30a and 30b so as to connect the inputs to the electronic switch 26 and sets the state of the Switch according to the content and source channel of the actuation signal. If a first predefined code is received, electronic switch 26 maintains the “straight-through connection with the output again being directed to audio outputs 14a, 14b. If a second predefined code is received, the corresponding channel is diverted to filter 32, ATD 34 and then transmitted via transmitter 16 to receiver 20 for playing via DTA 36, amplifier 22 and speaker 24. The non-diverted channel is then split and output to both audio outputs 14a, 14b.

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See also claim 1.

Alternatively, it would have been obvious to modify Litback to include chang[ing] the configuration of the playback device by configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 1[g].

Litback alone renders this limitation obvious. At the time of the alleged invention, it was well known that a playback device could be configured to output different audio—including different channels of audio—depending on its relationship with other playback devices. The known benefits for this type of configuration included enhanced listening experience and flexibility. In terms of the listening experience, a user could achieve multi-channel sound from a single device, while using the same device as part of a larger stereo or home theater configuration. In terms of flexibility, the user could expand his or her network of playback devices to accommodate different settings. *See* Hull et al., Building Hi-Fi Speaker Systems, Philips Application Book (“Philips”) (GOOG-SONOSITC-PA-00018241) at 8-10; Kraemer, Two Speakers are Better than 5.1, IEEE Spectrum (GOOG-SONOSITC-PA-00020200). Programming a playback device to determine a type of pairing and configure its audio output based on the type of pairing would have been a routine modification that a person of ordinary skill in the art would have been able to implement with a reasonable expectation of success. Configuring a playback device to process and output one or more specific audio channels would require nothing more than basic programming logic and hardware to process a pairing command and select one or more channels as disclosed in chipsets like the BridgeCo wireless loudspeaker solution.

Litback in combination with Rocketfish renders this limitation obvious. Rocketfish discloses a playback device that operates in a non-paired configuration in which it outputs two-channel sound (left and right), as well as a stereo-pair configuration in which it outputs no more than one channel of the two-channel sound (left or right). *See* Rocketfish User Manual at 24. A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Rocketfish. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to change the configuration of the playback device by configuring the playback device to

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perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices.

Litback in combination with Bryce renders this limitation obvious. Bryce discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Bryce at 4:23-31 (“A wireless audio system includes one or more wireless speaker subsystems. In a simple example, a wireless audio system includes a group of wireless speaker subsystems arranged throughout a room, and configured to playback the same audio in synchronicity. In a more complex example each wireless speaker subsystem's playback is defined by a role for that wireless speaker subsystem—for example in the context of a stereo configuration, or a five-channel surround sound configuration, or some other surround sound configuration.”). Bryce further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* at 9:14-58. A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Bryce, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to change the configuration of the playback device by configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices.

Litback in combination with Holmgren renders this limitation obvious. Holmgren discloses different pairing configurations, including configurations where a playback device outputs one channel or two-channel sound depending on whether it is paired with a subwoofer. *See* Holmgren at 6:45-56 (“In the case where the audio sources lack of the subwoofer channel effect, the process 300 goes on to determine the output speaker configuration, especially the presence or absence of a subwoofer at 312.”). A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Holmgren, including a two-channel configuration that includes a bass channel. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming

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logic and hardware to change the configuration of the playback device by configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices.

Litback in combination with Kraemer renders this limitation obvious. Kraemer explains that two speakers can be configured to produce various different pairing configurations, including stereo and surround sound configurations. *See* Kraemer at 4, 6 (““Under the right conditions, multichannel virtualizers score on two counts. They need only two speakers to create an experience superior to that of standard multispeaker surround systems.”). A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Kraemer, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to change the configuration of the playback device by configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices.

Litback in combination with Howard renders this limitation obvious. Howard discloses different pairing configurations, including those where different drivers are disabled in order to output one-channel and two-channel sound. *See* Howard at [0058]-[0060]. Howard further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Howard, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to change the configuration of the playback device by configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices.

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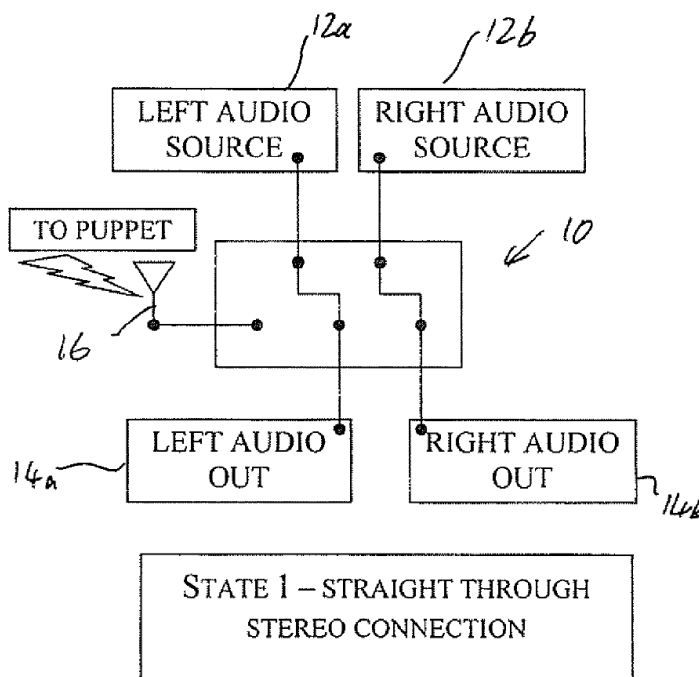
Litback in combination with Isely renders this limitation obvious. Isely discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Isely at [0005], [0037]-[0042]. Isely further discloses that each device is programmed to determine its pairing configuration and output specific audio channels accordingly. *See id.* A person of ordinary skill in the art would have found it obvious to use Litback playback devices to implement the different pairing configurations disclosed in Isely, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to change the configuration of the playback device by configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices.

Litback in combination with Fincham renders this limitation obvious. Fincham discloses different pairing configurations, including a stereo configuration in which each device outputs one channel, and surround sound configurations in which each device outputs one or more channels. *See* Fincham at 7:50-60 (“FIG. 12 is a simplified diagram conceptually illustrating playback of a 5.1 Surround format Soundtrack in the Sound system 600 of FIG. 6, when the sound system 600 is configured to apply the Surround left and right channel audio signals 1211, 1212 to the rear surround speakers 1224, 1125. As illustrated in FIG. 12, when the surround left and right channel audio signals 1211, 1212 are monaural, adaptive de-correlation processing (as represented by blocks 1271 and 1272) is activated, and when they are stereo in nature, adaptive sound processing for the rear surround speakers 1224, 1225 (as represented by block 1201) is activated.”); 8:11-39 (“FIG. 8 is a generalized block diagram of a Sound processing system 800 in accordance with one embodiment as disclosed herein, as may be used, for example, in connection with the speaker configuration illustrated in FIG. 6, or more generally, in any Sound system which utilizes multiple audio channels to provide Stereo source signals. As shown in FIG. 8, a left audio signal 811 and right audio signal 812 are provided to a sound processor 810, and then to a pair of closely spaced speakers 824, 825. The left audio signal 811 and right audio signal 812 may also be provided to left and right side (surround or non surround) speakers, not shown in FIG. 8. In a preferred embodiment, the sound processor 810 acts to “spread the Sound image produced by the two closely spaced speakers 824, 825 by employing a cross-cancellation technique wherein a cancellation signal is derived, for example, from the difference between the left and right audio signals 811, 812.

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The resulting difference signal is scaled, delayed (if necessary) and spectrally modified before being added to the left channel and, in opposite polarity, to the right channel. The spectral modification to the difference channel preferably takes the form of a low-frequency boost over a specified frequency range, in order to restore the correct timbral balance after the differencing process which causes a loss of bass when the low-frequency signals in each channel are similar. The effect of the sound processor 810 is to enlarge the perceived area and Stability of the Sound image produced by the speakers 324, 325, and provide an effect of stereo sound despite the close proximity of the speakers 324,325.”). A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the different pairing configurations disclosed in Fincham, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to change the configuration of the playback device by configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices.
To the extent that Litback is found not to disclose this feature, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant’s cover pleading.
10[pre] The playback device of claim 1, wherein the playback device is further configured to:
<i>See</i> claim 1[pre].
10[pre] (i) separate the audio data into separate audio channels:
Litback discloses this feature. <i>See, e.g.</i>, the following: FIG. 1A:

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FIG. 1A



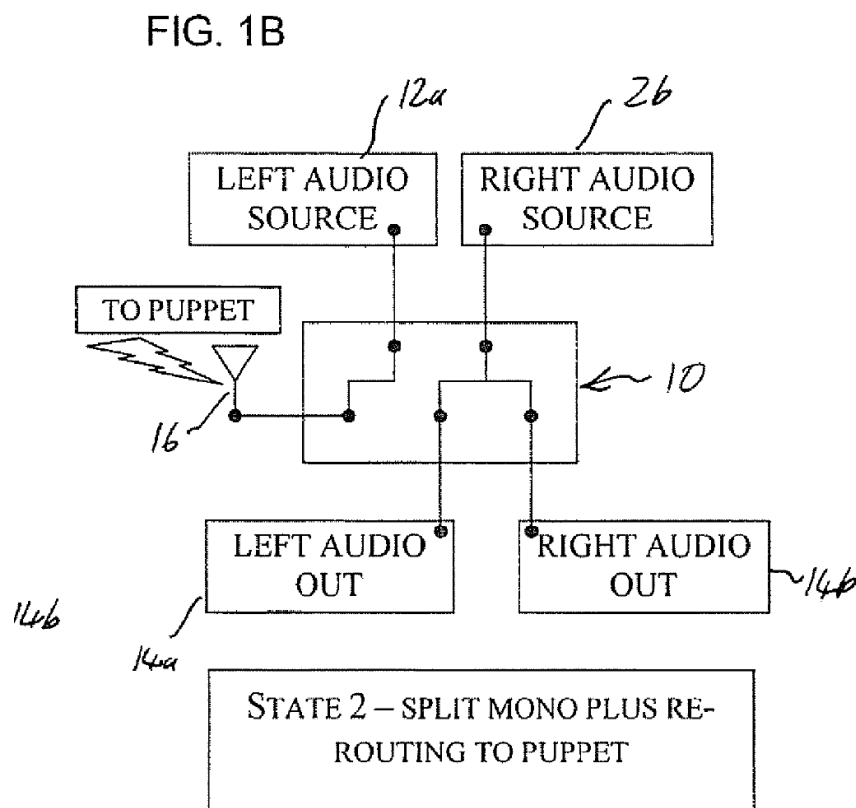
[0033]: Referring now to the drawings, FIGS. 1A and 1B illustrate schematically the underlying principle of the present invention. Specifically, FIGS. 1A and 1B show a Switching arrangement 10, constructed and operative according to the teachings of the present invention, deployed between audio inputs 12a, 12b and audio outputs 14a, 14b. In a first state as illustrated in FIG. 1A, Switching arrangement 10 transfers audio signals from each audio input 12a, 12b to the corresponding audio output 14a, 14b.

[0055]: Referring still particularly to FIG. 2, switching arrangement 10 preferably further includes one or more electro-mechanical Switch, typically implemented as one or more relay 30a and 30b. These are deployed to as to selectively connect respective audio inputs 12a, 12b to electronic switch 26, or to bypass electronic switch 26, instead connecting the audio inputs directly to the corresponding audio outputs 14a, 14b. Relays 30a and 30b are actuated by signal processor 28 so as to connect the inputs to electronic Switch 26 while an actuation signal is sensed (indicative of either the straight-through or diverted switching state), and so as to bypass electronic Switch 26 when actuation signal is absent, thereby providing a direct electrical conductor connection between audio inputs 12a, 12b and audio outputs 14a, 14b. Although the “straight-through” Switching state of the electronic Switch typically has minimal impact on the Sound quality of the audio signals, the provision of relays to bypass all electronic components and give a wired connection between inputs and outputs

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ensures that even any slight degradation introduced by the electronic components is avoided during programming not intended for use with the interactive puppet.

FIG. 1B:



[0061]: At this stage, the operation of Switching arrangement 10 and puppet 18 will be clearly understood. On receipt of electrical signals from audio inputs 12a and 12b, digital signal receiver 28a monitors for the predefined actuation signal. When no actuation signal is detected, processor 28 leaves relays 30a and 30b de-energized so that inputs 12a, 12b are directly connected to audio outputs 14a, 14b as if the Switching arrangement was not present. When an actuation signal is detected, it's digital content is retrieved and transferred to processor 28. Processor 28 then actuates relays 30a and 30b so as to connect the inputs to the electronic switch 26 and sets the state of the Switch according to the content and source channel of the actuation signal. If a first predefined code is received, electronic switch 26 maintains the "straight-through connection with the output again being directed to audio outputs 14a, 14b. If a second predefined code is received, the corresponding channel is diverted to filter 32, ATD 34 and then transmitted via transmitter 16 to receiver 20 for playing via DTA 36, amplifier

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22 and speaker 24. The non-diverted channel is then split and output to both audio outputs 14a, 14b.

Alternatively, it would have been obvious to modify Litback to include separat[ing] the audio data into separate audio channels, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 10[a].

Litback in combination with Goh463 renders this limitation obvious. Goh463 discloses separat[ing] the audio data into separate audio channels. *See* Goh463 at 4:23-35 (“In FIG. 1, once the first pair and second pair of speakers are stacked, regardless of whether the input signals are either stereophonic or multi-channel, electronic components 24 and 26 process the input signals prior to the signals passing into the multiplexers 22. In FIG. 2, when the input signal is stereophonic, electronic components 28 and 30 process the input signals prior to the signals passing into the multiplexers 22.”). A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the processing the audio data before the playback device outputs audio from the plurality of speaker drivers disclosed in Goh463, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to separate the audio data into separate audio channels.

Litback in combination with Fincham renders this limitation obvious. Fincham discloses separat[ing] the audio data into separate audio channels. *See* Fincham at 7:50-60 (“FIG. 12 is a simplified diagram conceptually illustrating playback of a 5.1 Surround format Soundtrack in the Sound system 600 of FIG. 6, when the sound system 600 is configured to apply the Surround left and right channel audio signals 1211, 1212 to the rear surround speakers 1224, 1225. As illustrated in FIG. 12, when the surround left and right channel audio signals 1211, 1212 are monaural, adaptive de-correlation processing (as represented by blocks 1271 and 1272) is activated, and when they are stereo in nature, adaptive sound processing for the rear surround speakers 1224, 1225 (as represented by block 1201) is activated.”); 8:11-39 (“FIG. 8 is a generalized block diagram of a Sound processing system 800 in accordance with one embodiment as disclosed herein, as may be used, for example, in connection with the speaker configuration illustrated in FIG. 6, or more generally, in any Sound system which utilizes multiple audio channels to provide Stereo source signals. As shown in FIG. 8, a left audio signal 811 and right audio signal 812 are provided

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to a sound processor 810, and then to a pair of closely spaced speakers 824, 825. The left audio signal 811 and right audio signal 812 may also be provided to left and right side (surround or non surround) speakers, not shown in FIG. 8. In a preferred embodiment, the sound processor 810 acts to “spread the Sound image produced by the two closely spaced speakers 824, 825 by employing a cross-cancellation technique wherein a cancellation signal is derived, for example, from the difference between the left and right audio signals 811, 812. The resulting difference signal is scaled, delayed (if necessary) and spectrally modified before being added to the left channel and, in opposite polarity, to the right channel. The spectral modification to the difference channel preferably takes the form of a low-frequency boost over a specified frequency range, in order to restore the correct timbral balance after the differencing process which causes a loss of bass when the low-frequency signals in each channel are similar. The effect of the sound processor 810 is to enlarge the perceived area and Stability of the Sound image produced by the speakers 324, 325, and provide an effect of stereo sound despite the close proximity of the speakers 324,325.”). A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the processing the audio data before the playback device outputs audio from the plurality of speaker drivers disclosed in Fincham, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to separate the audio data into separate audio channels. To the extent that Litback is found not to disclose this feature, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant’s cover pleading.
10[b] (ii) output audio based on audio data of at least one separate audio channel from the one or more speaker drivers, and:
Litback discloses this feature. <i>See, e.g.</i>, the following: [0057]: As mentioned before, the actuation signal is preferably chosen to be inherently non-intrusive to the hearing of the user, even when not removed from the output Soundtrack. In the particular example illustrated here of an actuation signal encoded in a frequency range above about 15 kHz, the actuation signal is easily removed by simple filtering techniques which do not significantly affect the audio output sound quality. This implementation of the present invention

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therefore preferably provides filtering to remove the relevant range of frequencies. Thus, a filter 32 is preferably deployed for removing the actuation signal from the electronic signal prior to outputting of the audio signal via puppet 18. In the implementation illustrated here, filter 32 is deployed as part of Switching arrangement 10 interposed between electronic switch 26 and transmitter 16. Also shown here are output filters 34a and 34b which remove the actuation signals from the output from electronic Switch 26 to audio outputs 14a and 14b. It will be noted that the positioning of the filters can vary. For example, the filters could be located between relays 30a, 30b and electronic switch 26. The filter on the puppet output could alternatively be located within the puppet 18.

[0061]: At this stage, the operation of Switching arrangement 10 and puppet 18 will be clearly understood. On receipt of electrical signals from audio inputs 12a and 12b, digital signal receiver 28a monitors for the predefined actuation signal. When no actuation signal is detected, processor 28 leaves relays 30a and 30b de-energized so that inputs 12a, 12b are directly connected to audio outputs 14a, 14b as if the Switching arrangement was not present. When an actuation signal is detected, it's digital content is retrieved and transferred to processor 28. Processor 28 then actuates relays 30a and 30b so as to connect the inputs to the electronic switch 26 and sets the state of the Switch according to the content and source channel of the actuation signal. If a first predefined code is received, electronic switch 26 maintains the “straight-through connection with the output again being directed to audio outputs 14a, 14b. If a second predefined code is received, the corresponding channel is diverted to filter 32, ATD 34 and then transmitted via transmitter 16 to receiver 20 for playing via DTA 36, amplifier 22 and speaker 24. The non-diverted channel is then split and output to both audio outputs 14a, 14b.

Alternatively, it would have been obvious to modify Litback to include output[ting] audio based on audio data of at least one separate audio channel from the one or more speaker drivers, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 10[b].

To the extent that Litback is found not to disclose this feature, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant's cover pleading.

10[c] (iii) transmit audio data of at least one additional separate audio channel over the network:

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Litback discloses this feature. *See, e.g.*, the following:

[0057]: As mentioned before, the actuation signal is preferably chosen to be inherently non-intrusive to the hearing of the user, even when not removed from the output Soundtrack. In the particular example illustrated here of an actuation signal encoded in a frequency range above about 15 kHz, the actuation signal is easily removed by simple filtering techniques which do not significantly affect the audio output sound quality. This implementation of the present invention therefore preferably provides filtering to remove the relevant range of frequencies. Thus, a filter 32 is preferably deployed for removing the actuation signal from the electronic signal prior to outputting of the audio signal via puppet 18. In the implementation illustrated here, filter 32 is deployed as part of Switching arrangement 10 interposed between electronic switch 26 and transmitter 16. Also shown here are output filters 34a and 34b which remove the actuation signals from the output from electronic Switch 26 to audio outputs 14a and 14b. It will be noted that the positioning of the filters can vary. For example, the filters could be located between relays 30a, 30b and electronic switch 26. The filter on the puppet output could alternatively be located within the puppet 18.

[0061]: At this stage, the operation of Switching arrangement 10 and puppet 18 will be clearly understood. On receipt of electrical signals from audio inputs 12a and 12b, digital signal receiver 28a monitors for the predefined actuation signal. When no actuation signal is detected, processor 28 leaves relays 30a and 30b de-energized so that inputs 12a, 12b are directly connected to audio outputs 14a, 14b as if the Switching arrangement was not present. When an actuation signal is detected, it's digital content is retrieved and transferred to processor 28. Processor 28 then actuates relays 30a and 30b so as to connect the inputs to the electronic switch 26 and sets the state of the Switch according to the content and source channel of the actuation signal. If a first predefined code is received, electronic switch 26 maintains the “straight-through connection with the output again being directed to audio outputs 14a, 14b. If a second predefined code is received, the corresponding channel is diverted to filter 32, ATD 34 and then transmitted via transmitter 16 to receiver 20 for playing via DTA 36, amplifier 22 and speaker 24. The non-diverted channel is then split and output to both audio outputs 14a, 14b.

Alternatively, it would have been obvious to modify Litback to include transmit[ing] audio data of at least one additional separate audio channel over the network, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 10[c].

Litback in combination with Goh463 renders this limitation obvious. Goh463 discloses transmit[ing] audio data of at least one additional separate audio

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channel over the network. *See* Goh463 at 4:23-35 (“In FIG. 1, once the first pair and second pair of speakers are stacked, regardless of whether the input signals are either stereophonic or multi-channel, electronic components 24 and 26 process the input signals prior to the signals passing into the multiplexers 22. In FIG. 2, when the input signal is stereophonic, electronic components 28 and 30 process the input signals prior to the signals passing into the multiplexers 22.”). A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the processing the audio data before the playback device outputs audio from the plurality of speaker drivers disclosed in Goh463, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to transmit audio data of at least one additional separate audio channel over the network.

Litback in combination with Fincham renders this limitation obvious. Fincham discloses transmit[ing] audio data of at least one additional separate audio channel over the network. *See* Fincham at 7:50-60 (“FIG. 12 is a simplified diagram conceptually illustrating playback of a 5.1 Surround format Soundtrack in the Sound system 600 of FIG. 6, when the sound system 600 is configured to apply the Surround left and right channel audio signals 1211, 1212 to the rear surround speakers 1224, 1225. As illustrated in FIG. 12, when the surround left and right channel audio signals 1211, 1212 are monaural, adaptive de-correlation processing (as represented by blocks 1271 and 1272) is activated, and when they are stereo in nature, adaptive sound processing for the rear surround speakers 1224, 1225 (as represented by block 1201) is activated.”); 8:11-39 (“FIG. 8 is a generalized block diagram of a Sound processing system 800 in accordance with one embodiment as disclosed herein, as may be used, for example, in connection with the speaker configuration illustrated in FIG. 6, or more generally, in any Sound system which utilizes multiple audio channels to provide Stereo source signals. As shown in FIG. 8, a left audio signal 811 and right audio signal 812 are provided to a sound processor 810, and then to a pair of closely spaced speakers 824, 825. The left audio signal 811 and right audio signal 812 may also be provided to left and right side (surround or non surround) speakers, not shown in FIG. 8. In a preferred embodiment, the sound processor 810 acts to “spread the Sound image produced by the two closely spaced speakers 824, 825 by employing a cross-cancellation technique wherein a cancellation signal is derived, for example, from the difference between the left and right audio signals 811, 812. The resulting difference signal is scaled, delayed (if necessary) and spectrally modified before being added to the left channel and, in opposite polarity, to the right channel. The spectral modification to the difference channel preferably takes the form of a low-frequency boost over a specified frequency

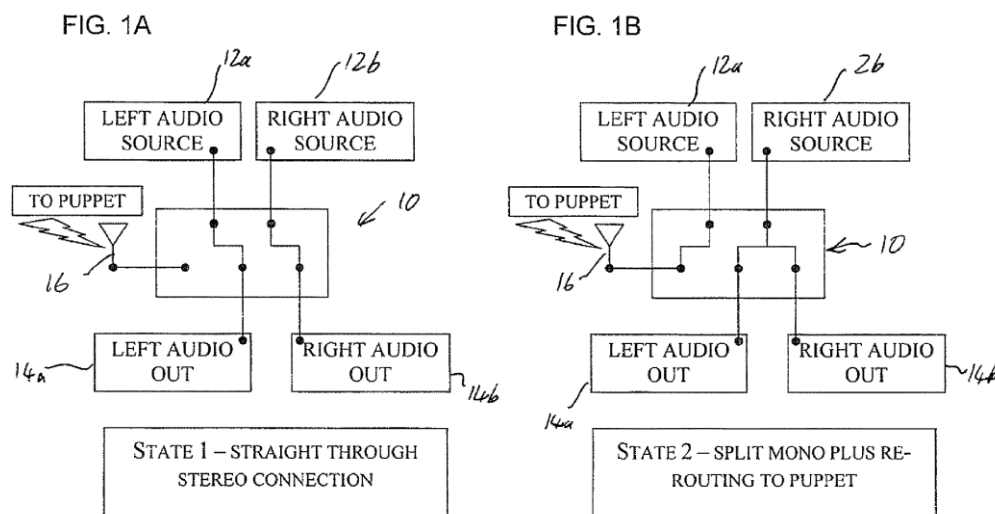
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range, in order to restore the correct timbral balance after the differencing process which causes a loss of bass when the low-frequency signals in each channel are similar. The effect of the sound processor 810 is to enlarge the perceived area and Stability of the Sound image produced by the speakers 324, 325, and provide an effect of stereo sound despite the close proximity of the speakers 324,325.”). A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the processing the audio data before the playback device outputs audio from the plurality of speaker drivers disclosed in Fincham, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to transmit audio data of at least one additional separate audio channel over the network. To the extent that Litback is found not to disclose this feature, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant’s cover pleading.
12[pre] The playback device of claim 1, wherein the playback device is further configured to:
<i>See claim 1[pre].</i>
12[a] (i) separate the audio data into separate audio channels:
<i>See claim 10[a].</i>
12[b] (ii) output audio based on audio data of at least one separate audio channel from the one or more speaker drivers:
<i>See claim 10[b].</i>
12[c] (iii) transmit the audio data over the network:
<i>See claim 10[c].</i>
13 The playback device of claim 1, wherein the playback device is further configured to receive another signal from the controller over the network, wherein the other signal

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comprises an instruction for the playback device to separate the pair with the one or more other playback devices:

Litback discloses this feature. *See, e.g.*, the following:

FIGS. 1A and 1B:



[0033]: Referring now to the drawings, FIGS. 1A and 1B illustrate schematically the underlying principle of the present invention. Specifically, FIGS. 1A and 1B show a Switching arrangement 10, constructed and operative according to the teachings of the present invention, deployed between audio inputs 12a, 12b and audio outputs 14a, 14b. In a first state as illustrated in FIG. 1A, Switching arrangement 10 transfers audio signals from each audio input 12a, 12b to the corresponding audio output 14a, 14b. In a second state as illustrated in FIG. 1B, audio signals from one of the audio inputs 12a are redirected to a transmitter 16 for transmission to a remote puppet (to be described below). Most preferably, audio signals from the second audio input 12b are split to provide split mono audio to both audio outputs 14a, 14b.

[0034]: Switching between the two states of FIGS. 1A and 1B is preferably performed dynamically during the programming on the basis of an actuation signal added to the audio channel for signaling the Switching between modes. The actuation signal is chosen to be non-intrusive to the audio experience of most users, even if played via regular audio equipment. In certain cases, particularly where frequencies near or beyond the upper range of the audible frequency range are used, the actuation signal may be removable by simple filtering techniques with minimal impact on the quality of the audio content itself. At the same time, the actuation signal is chosen to be in the range of

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frequencies which are reliably reproduced by the sound recording and transmission techniques in common usage in audio and audio-visual entertainment systems, thereby allowing the actuation system to be added to the Soundtrack of given programming without requiring any modification of the storage format or any other system hardware.

[0047]: Switching arrangement 10 includes an electronic switch 26 electrically switchable between a straight-through state, wherein the audio signals from audio inputs 12a, 12b are transferred to corresponding audio outputs 14a, 14b, and a diverted State, wherein the audio signal from one of audio inputs 12a, 12b is transferred to transmitter 16 for transmitting to puppet 18. By way of a non-limiting preferred example, the invention is illustrated here with a signal processor 28 is configured to be responsive to a predefined actuation signal in a range of frequencies between about 15 kHz and about 20 kHz superimposed on the audio signal as part of the electrical signal from the audio input 12a or 12b to switch the electronic switch from the straight-through state to the diverted state. The modifications required for an alternative implementation of the present invention using one of the other types of non-intrusive actuation signal mentioned above will be self-evident to one ordinarily skilled in the art.

[0055]: Relays 30a and 30b are actuated by signal processor 28 so as to connect the inputs to electronic Switch 26 while an actuation signal is sensed (indicative of either the straight-through or diverted switching state)[.]

Alternatively, it would have been obvious to modify Litback to include the playback device that is further configured to receive another signal from the controller over the network, wherein the other signal comprises an instruction for the playback device to separate the pair with the one or more other playback devices, based on the knowledge of a person of ordinary skill in the art and the teachings of the references disclosed in Exhibit B, claim 13.

Litback in combination with Goh463 renders this limitation obvious. Goh463 discloses the playback device that is further configured to receive another signal from the controller over the network, wherein the other signal comprises an instruction for the playback device to separate the pair with the one or more other playback devices. *See* Goh463 at 4:23-35 (“In FIG. 1, once the first pair and second pair of speakers are stacked, regardless of whether the input signals are either stereophonic or multi-channel, electronic components 24 and 26 process the input signals prior to the signals passing into the multiplexers 22. In FIG. 2, when the input signal is stereophonic, electronic components 28 and 30 process the input signals prior to the signals passing into the multiplexers 22.”). A person of ordinary skill in the art would have found it obvious to use Litback’s playback devices to implement the processing the audio data before the playback device outputs audio from the plurality of speaker drivers disclosed in Goh463, including stereo and surround sound configurations. The

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motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to configure the playback device to receive another signal from the controller over the network, wherein the other signal comprises an instruction for the playback device to separate the pair with the one or more other playback devices.

Litback in combination with Fincham renders this limitation obvious. Fincham discloses the playback device that is further configured to receive another signal from the controller over the network, wherein the other signal comprises an instruction for the playback device to separate the pair with the one or more other playback devices. *See* Fincham at 7:50-60 (“FIG. 12 is a simplified diagram conceptually illustrating playback of a 5.1 Surround format Soundtrack in the Sound system 600 of FIG. 6, when the sound system 600 is configured to apply the Surround left and right channel audio signals 1211, 1212 to the rear surround speakers 1224, 1225. As illustrated in FIG. 12, when the surround left and right channel audio signals 1211, 1212 are monaural, adaptive de-correlation processing (as represented by blocks 1271 and 1272) is activated, and when they are stereo in nature, adaptive sound processing for the rear surround speakers 1224, 1225 (as represented by block 1201) is activated.”); 8:11-39 (“FIG. 8 is a generalized block diagram of a Sound processing system 800 in accordance with one embodiment as disclosed herein, as may be used, for example, in connection with the speaker configuration illustrated in FIG. 6, or more generally, in any Sound system which utilizes multiple audio channels to provide Stereo source signals. As shown in FIG. 8, a left audio signal 811 and right audio signal 812 are provided to a sound processor 810, and then to a pair of closely spaced speakers 824, 825. The left audio signal 811 and right audio signal 812 may also be provided to left and right side (surround or non surround) speakers, not shown in FIG. 8. In a preferred embodiment, the sound processor 810 acts to “spread the Sound image produced by the two closely spaced speakers 824, 825 by employing a cross-cancellation technique wherein a cancellation signal is derived, for example, from the difference between the left and right audio signals 811, 812. The resulting difference signal is scaled, delayed (if necessary) and spectrally modified before being added to the left channel and, in opposite polarity, to the right channel. The spectral modification to the difference channel preferably takes the form of a low-frequency boost over a specified frequency range, in order to restore the correct timbral balance after the differencing process which causes a loss of bass when the low-frequency signals in each channel are similar. The effect of the sound processor 810 is to enlarge the perceived area and Stability of the Sound image produced by the speakers 324, 325, and provide an effect of stereo sound despite the close proximity of the speakers 324,325.”). A person of ordinary skill in the art

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would have found it obvious to use Litback’s playback devices to implement the processing the audio data before the playback device outputs audio from the plurality of speaker drivers disclosed in Fincham, including stereo and surround sound configurations. The motivation for doing so would have been to provide users with an improved listening experience and flexibility, both of which are goals of the Litback system. A person of ordinary skill in the art would have had a reasonable expectation of success implementing the combination because it would require nothing more than basic programming logic and hardware to configure the playback device to receive another signal from the controller over the network, wherein the other signal comprises an instruction for the playback device to separate the pair with the one or more other playback devices. To the extent that Litback is found not to disclose this feature, it would have been obvious based on the disclosures of Litback alone or in combination with the disclosures of one or more of the references cited for this limitation in Exhibits 025-01 through 025-06 or Exhibit 025-B for the reasons discussed herein and in Defendant’s cover pleading.
18[pre] Tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the instructions, when executed by one or more processors, cause a playback device to:
<i>See claim 1[c].</i>
18[a] receive a signal from a controller over a network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles:
<i>See claim 1[d].</i>
18[b] receive audio data over the network:
<i>See claim 12[c].</i>
18[c] after the playback device has determined it is not paired with the one or more other playback devices, configuring the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from one or more speaker drivers:
<i>See claims 1[e] and 1[f].</i>

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18[d] after the playback device has determined it is paired with the one or more other playback devices such that the playback device and the one or more other playback devices have the different playback roles, change the configuration of the playback device by configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers:
<i>See claims 1[e] and 1[g].</i>