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(54) **METHOD AND SYSTEM FOR PLAY-ONLY MEDIA PLAYER**

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(51) **Int. Cl.**
G06F 12/14 (2006.01)

(52) **U.S. Cl.** **711/163**; 726/26

(58) **Field of Classification Search** 711/163; 726/26

See application file for complete search history.

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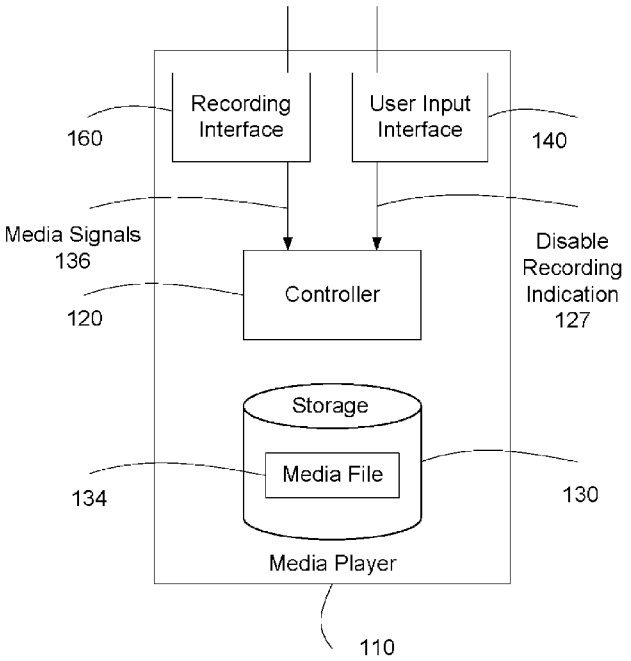
(57) **ABSTRACT**

A method and system for play-only media player is disclosed. The player includes a controller, a recording interface, and a non-removable storage. In recording content onto the media player, media signals are received through the recording interface. The media signals are stored in a media file on non-removable storage. When a controller receives a disable recording indication, it permanently disables the recording capabilities of the media player. The media file now is not accessible except for the purpose of playing the media file. To play the media file, a play indication is received by the controller. The controller then retrieves the content from the media file and sends the content to an output interface. In this manner, the media player only plays pre-loaded media content. The digital right for the content is protected against unauthorized copying while maintaining user friendliness of the media player.

29 Claims, 4 Drawing Sheets



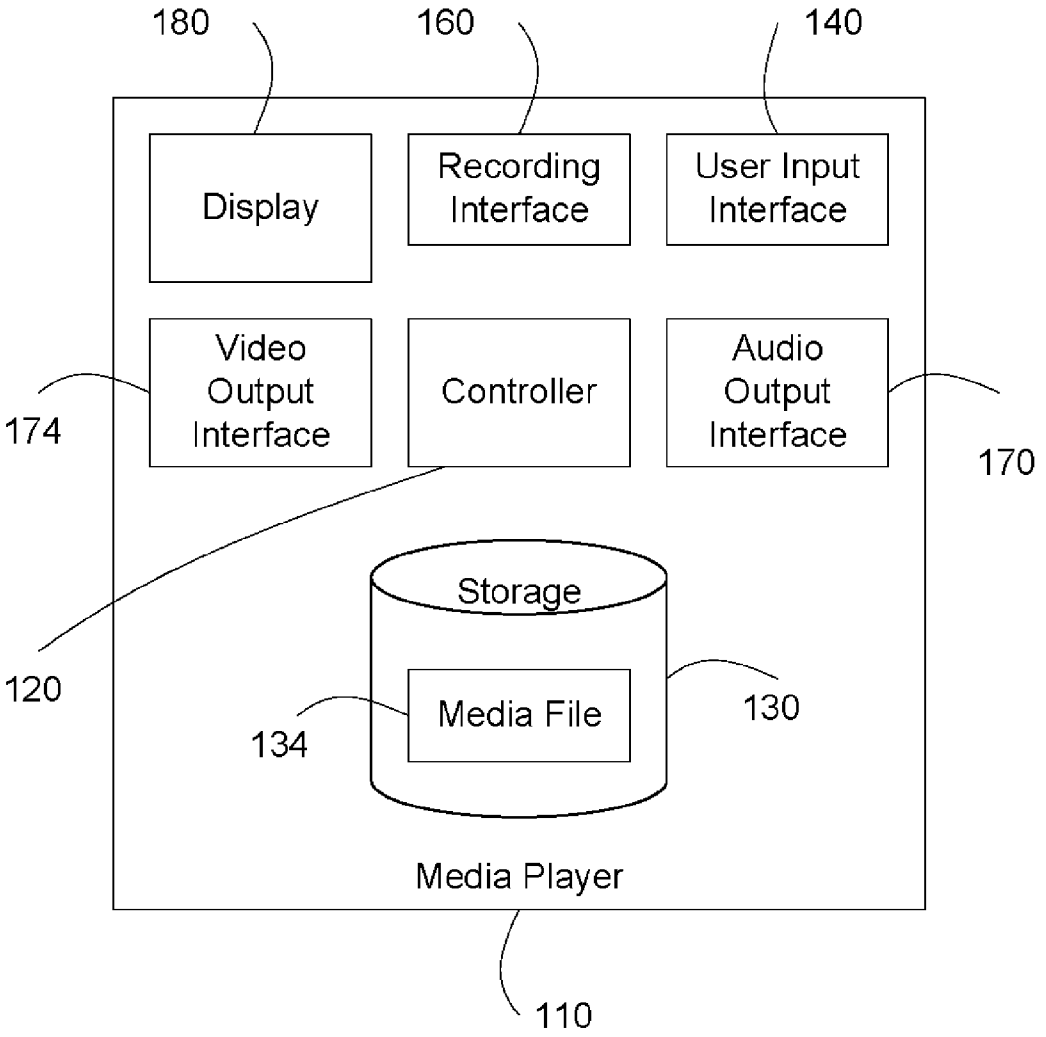

180
160
140
Display
Recording Interface
User Input Interface
Video Output Interface
Controller
Audio Output Interface
174
170
Storage
120
Media File
130
134
Media Player
110

Figure 1

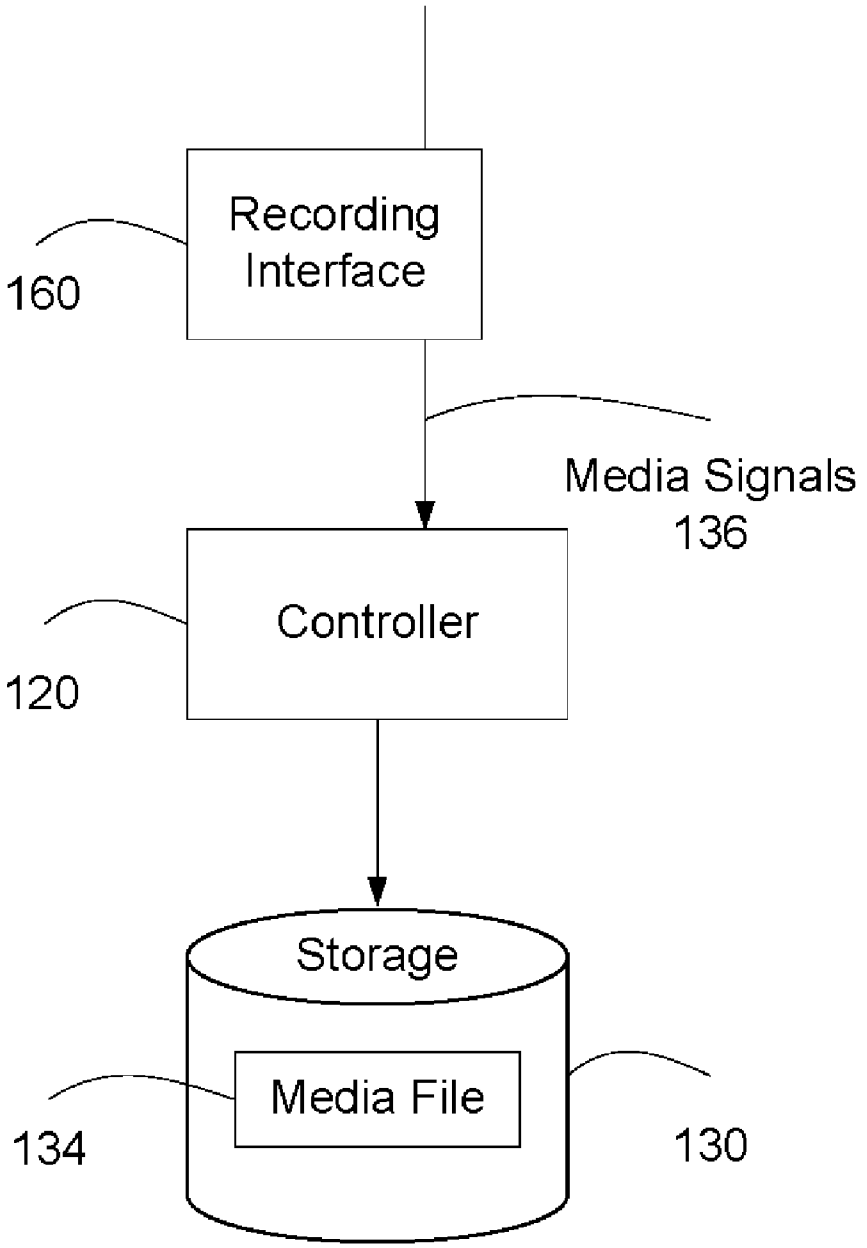

Recording Interface
160
Media Signals
136
Controller
120
Storage
Media File
134
130

Figure 2

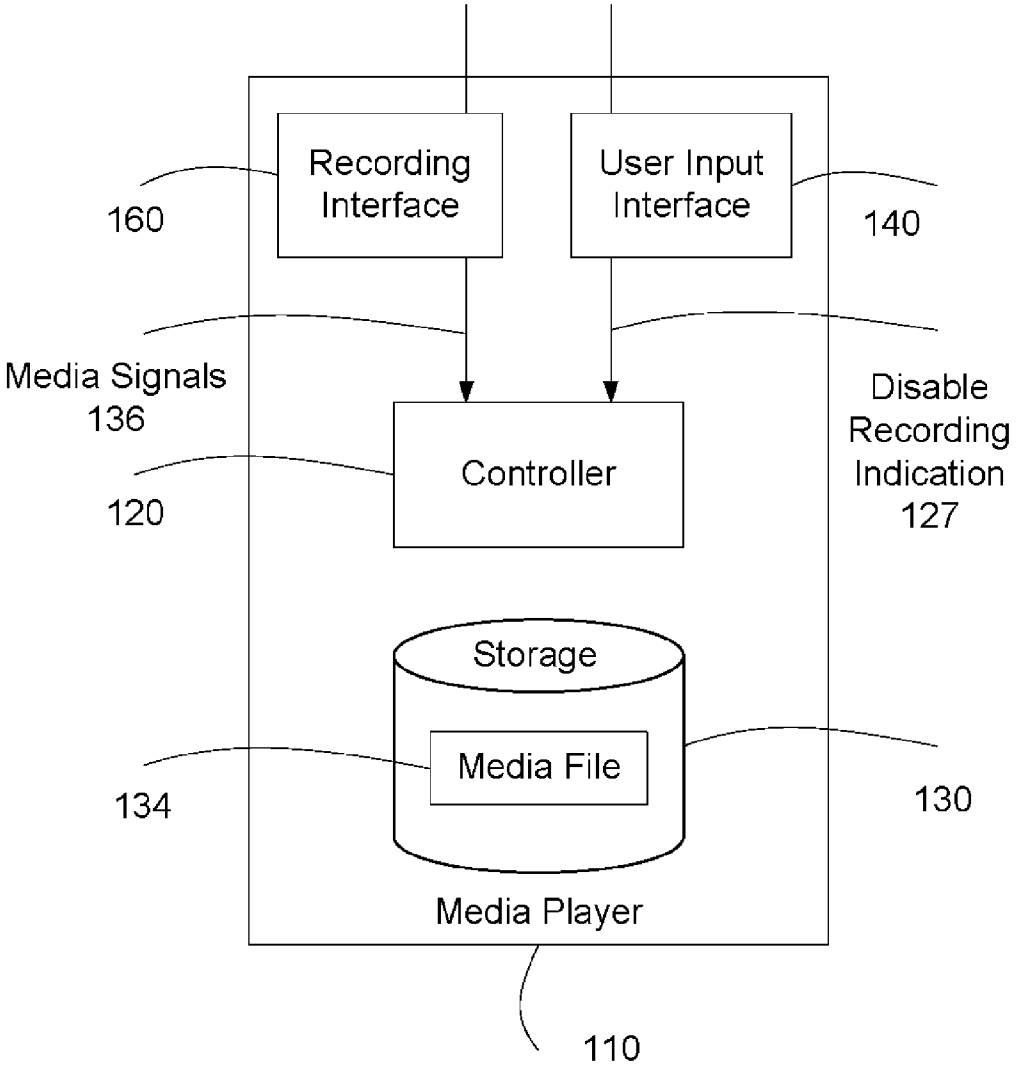

Recording Interface
User Input Interface
160
140
Media Signals 136
Disable Recording Indication 127
Controller
120
Storage
Media File
134
130
Media Player
110

Figure 3

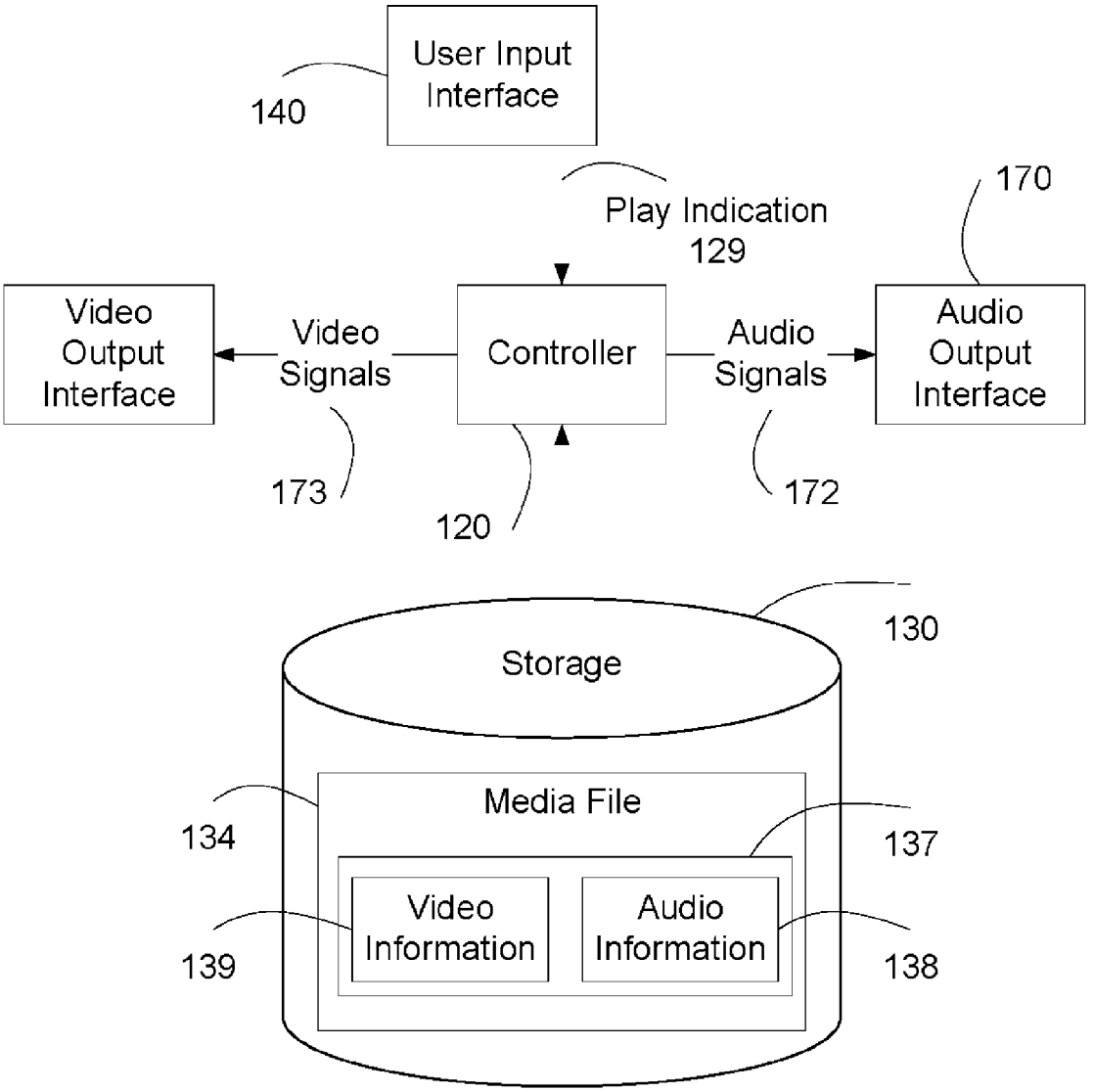

User Input Interface
140
Play Indication
129
170
Video Output Interface
Video Signals
Controller
Audio Signals
Audio Output Interface
173
120
172
130
Storage
Media File
134
137
Video Information
Audio Information
139
138

Figure 4

METHOD AND SYSTEM FOR PLAY-ONLY MEDIA PLAYER

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application is a continuation of U.S. patent application Ser. No. 11/595,362, filed on Nov. 9, 2006, now U.S. Pat. No. 7,840,769.

BACKGROUND OF THE INVENTION

1. Field

This invention relates generally to media, particularly to a system and method for media player that only plays pre-loaded media content.

2. Related Arts

Digitization of pictures, music and movies brings convenience to the entertainment and media industry. Digital media has proved to be a highly efficient and effective distribution mechanism. For example, digital music download, music ripping and music CD burning by consumers are common.

The ease of media file distribution has had major business implications, especially in illegal copying. Examples were illegal music download through peer-to-peer copying mechanisms like Napster, or Kazaa. Or more frequently, a consumer copies downloaded music in MP3 format to CD's and MP3 players. In one example, John is a high school student. He, on Tuesday, purchased and downloaded last week's top 10 pop songs. He burned a music CD for his desktop music system with the songs. In addition, he ripped the songs to his iPod, his sisters' MP3 players, and his father's home media center. After John talked to his friends in the school, John copied the files to his classmates' MP3 players.

Several security mechanisms are being introduced to address the problem. They are mainly related to digital right management (DRM), where a signature is put into a media file, and a user is given a key. A media player would be able to play the media file only after the user presents the key. Often times, the key is given to the media player so that the media player can play the media file while other media players cannot play the media file. Although such security mechanisms partially solve the copying problem, they are very inconvenient to users. As in the above example, John downloaded to his PC the songs with DRM protection. In one embodiment, the key was given to John's PC. John was able to listen to the songs. After John ripped the songs to his iPod, he cannot play the songs with his iPod. Over a weekend, John's buys a new PC and transfers the songs to the new PC. John cannot play the songs on the new PC as the new PC does not have the key.

The above illustrates a need for a user friendly solution to protect against unauthorized copying of media content.

BRIEF SUMMARY OF THE INVENTION

A method and system for play-only media player is disclosed. The player includes a controller, a recording interface, and a non-removable storage. In recording content onto the media player, media signals are received through the recording interface. The media signals are stored in a media file on non-removable storage. When a controller receives a disable recording indication, it permanently disables the recording capabilities of the media player. The media file now is not accessible except for the purpose of playing the media file. To play the media file, a play indication is received by the controller. The controller then retrieves the content from the media file and sends the content to an output interface. In this manner, the media player only plays pre-loaded media content. The digital right for the content is protected against unauthorized copying while maintaining user friendliness of the media player.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE FIGURES

FIG. **1** illustrates a play-only pre-recorded media player.

FIG. **2** illustrates a process for recording.

FIG. **3** illustrates a process for disabling recording.

FIG. **4** illustrates a process for playing media file.

DETAILED DESCRIPTION OF THE INVENTION

FIG. **1** illustrates a play-only pre-recorded media player.

Media player **110** includes a plurality of components—controller **120**, non-removable storage **130**, recording interface **160**, user input interface **140**, and a display **180**.

Storage **130** stores at least one media file **134**. In one embodiment, media file **134** is an audio media file such as a song, an audio recording, a music concert recording, a talk show or an interview recording. In one embodiment, media file **134** is a music album. In one embodiment, media file **134** is a video media file such as a movie, a video recording such as a television program, a concert or a theatrical play recording, a music television (MTV™), a short film, a cooking, exercise or self-improvement instructional program, a documentary, a comic performance, or a lecture recording.

In one embodiment, storage **130** includes flash memory, or a hard disk drive. In one embodiment, storage **130** includes a database.

In one embodiment media file **134** include audio information; media player **110** includes an audio output interface **170** for audio information presentation. In one embodiment, audio output interface **170** includes an audio jack of various sizes, such as ¼" (6.35 mm), ⅛" (3.5 mm) or 3/32" (2.5 mm). In one embodiment, the audio jack is a two-conductor version for monophonic audio, or a three-conductor version for stereophonic audio. In one embodiment, audio output interface **170** includes a radio transmitter based on Personal Area Network (PAN) technology, such as Bluetooth technology. In one embodiment, audio output interface **170** includes a Radio Corporation of America (RCA) jack also known as a phono jack. In one embodiment, audio output interface **170** includes a speaker.

In one embodiment media file **134** includes video information. Media player **110** includes a video output interface **174** for video information presentation. In one embodiment, video output interface **174** includes a graphical display screen, such as a Thin-Film Transistor (TFT) screen, a Plasma Display Panel (PDP), a Liquid Crystal Display (LCD), or a Surface-conduction Electron-emitter Display (SED). In one embodiment, video output interface **174** includes an RCA jack, a composite video interface, or an S-Video interface. In one embodiment, video output interface **174** includes a High-Definition Multimedia Interface (HDMI) interface, or a High-Bandwidth Digital Content Protection (HDCP) interface. In an embodiment, video output interface **174** includes display **180**.

Controller **120** records through recording interface **160** to storage **130**. In one embodiment, recording interface **160** includes a Universal Serial Bus (USB) interface. In one embodiment, recording interface **160** includes an audio jack, an RCA jack, a component video interface, a composite video interface, or an S-Video interface. In one embodiment,

recording interface **160** includes a High-Definition Multimedia Interface (HDMI) interface, or a High-Bandwidth Digital Content Protection (HDCP) interface. In one embodiment, recording interface **160** includes a network interface, such as an Ethernet interface.

FIG. **2** illustrates a process for recording.

Controller **120** receives a plurality of media signals **136** through recording interface **160**. In one embodiment, the plurality of media signals **136** are monophonic or stereophonic analog audio signals. In one embodiment, the plurality of media signals **136** are digital audio signals, such as Pulse Code Modulation (PCM) digital audio signals in 8 kHz 8-bit monophonic, 8 kHz 16-bit stereophonic, or 44.1 kHz 16-bit stereophonic format. In one embodiment, the plurality of media signals **136** are in a compressed codec format such as G723.1. In one embodiment, the plurality of media signals **136** are in Moving Picture Experts Group 1 (MPEG-1 Level-3) also known as MP3 digital format. In one embodiment, the plurality of media signals **136** are analog video signals in National Television System Committee (NTSC) or phase-alternating line (PAL) format. In one embodiment, the plurality of media signals **136** are digital video signals, such as MPEG-4, Windows Media Video (WMV) or Society of Motion Picture and Television Engineers (SMPTE) format.

Controller **120** stores media signals **136** in storage **130**. Controller **120** combines a plurality of media signals **136** into media file **134** in storage **130**.

In one embodiment, controller **120** records media file **134** by performing a media file transfer and media signals **136** includes portion of media file **134**.

In another embodiment, controller **120** records media file **134** in a live performance setting, such as during a concert, a studio recording session, or a live interview. For example, controller **120** receives media signals **136** through recording interface **160** from a media system, such as a media mixer, a media amplifier, a studio production system, or a home entertainment system. The media system captures the live performance via one or more capturing devices such as microphone or video camera, processes or combines the captured signals into media signals **136** before sending to recording interface **160**.

In one embodiment, controller **120** converts media signals **136** prior to storing in storage **130**. In an embodiment, controller **120** converts analog audio signals into digital format such as MP3 format or PCM format. In one embodiment, controller **120** converts analogy video signals such as NTSC or PAL signals into MPEG4 format. In one more embodiment, controller **120** converts media signals **136** from a digital format to a different digital format prior to storing in storage **130**.

In one embodiment, media signals **136** indicate an end of media file **134**. Controller **120** completes storing media file **134** and starts storing subsequent received media signals to a new media file.

FIG. **3** illustrates a process for disabling recording.

Controller **120** receives disable recording indication **127** from recording interface **160**, or user input interface **140**. After receiving disable recording indication **127**, controller **120** permanently turns off recording capability. Subsequently controller **120** does not record media files into storage **130**.

In one embodiment, controller **120** disables recording interface **160**. In one embodiment, controller **120** permanently does not accept any media signal **136** from recording interface **160**. In one embodiment, controller **120** discards any media signal **136** received from recording interface **160**. In one embodiment, controller **120** permanently disables recording interface **160** such that recording interface **160** cannot receive any media signals. In one embodiment, recording interface **160** includes a hardware register, a relay, or a flip-flop; controller **120** permanently sets recording interface **160** such that recording interface **160** cannot receive any media signals.

In a different embodiment, an operator physically removed recording interface **160**, or closes or seals the opening of recording interface **160** rendering recording interface **160** inoperable.

Once the recording capabilities of the media player **110** is disabled, the media file **134** cannot be accessed except by the controller **120** for the purpose of playing the media file **134**.

FIG. **4** illustrates a process for playing media file.

Controller **120** plays media file **134**.

Controller **120** receives a play indication **129** from user input interface **140** to play. In one embodiment, play indication **129** specifies media file **134**. In one embodiment, controller **120** selects media file **134**. In an example, controller **120** selects randomly, the previously played media file, or the first media file from a file list.

Controller **120** retrieves content **137** from media file **134**. In one embodiment, content **137** includes audio information **138**. Controller **120** converts audio information **138** to audio signals **172**, and sends audio signals **172** to audio output interface **170**. In one embodiment, controller **120** converts MP3 digital signals into analog audio signals. In one embodiment, controller **120** converts a compressed digital audio format such as G723.1 into PCM format. In one embodiment, controller **120** converts the audio component of MPEG-4 format into analog audio signals.

In one embodiment, content **137** includes video information **139**. Controller **120** converts video information **139** into video signals **173**, and sends video signals **173** to video output interface **174**. In one embodiment, controller **120** converts the video component of MPEG-4 format into the video component of NTSC format. In one embodiment, controller **120** converts the video component of MWV format into PAL format.

In one embodiment, media file **134** includes additional information such as an artist name, an author name, a music title, a movie title, time duration, or an album name. Controller **120** displays the information on display **180**.

In one embodiment, display **180** includes a graphical or textual display screen. In one embodiment, display **180** includes a Light-emitting Diode (LED). In one embodiment, media player **110** does not include display **180**.

In one embodiment, media player **110** is for audio recording for a concert, an interview, or a syndicated audio program. In one embodiment, media player **110** is for video recording for a play, a concert or a sports event. In one embodiment, media player **110** is for promotion purpose, such as corporate product promotion, market promotion, company promotion or event promotion. In one embodiment, media play **110** is for media distribution. In one embodiment, media player **110** is for rental purpose. In one embodiment media player **110** plays media file **134** only once, maximum three times or within 24 hours.

In one embodiment, media player **110** includes a non-replaceable and non-rechargeable battery as power source. Media player **110** cannot play media file **134** once the battery is fully discharged.

In one embodiment, the controller **120** and the non-removable storage **130** are integrated on a system on chip (SOC).

Foregoing described embodiments of the invention are provided as illustrations and descriptions. They are not intended to limit the invention to precise form described. In particular, it is contemplated that functional implementation

of invention described herein may be implemented equivalently in hardware, software, firmware, and/or other available functional components or building blocks, and that networks may be wired, wireless, or a combination of wired and wireless. Other variations and embodiments are possible in light of above teachings, and it is thus intended that the scope of invention not be limited by this Detailed Description, but rather by Claims following.

What is claimed is:

1. A method for recording content onto a media player, comprising:

(a) receiving a plurality of media signals through a recording interface;

(b) storing the plurality of media signals in a media file on a non-removable storage;

(c) receiving a disable recording indication; and

(d) in response to the disable recording indication, permanently disabling capabilities of the media player to record onto the non-removable storage.

2. The method of claim **1**, wherein the plurality of media signals comprises audio signals, video signals, or textual signals.

3. The method of claim **1**, wherein the permanently disabling (d) comprises:

(d1) in response to the disable recording indication, permanently disabling through the recording interface the capabilities of the media player to record onto the non-removable storage.

4. The method of claim **1**, further comprising:

(e) playing content from the media file.

5. The method of claim **4**, wherein the media player cannot play the media file once the media file has been played a predetermined number of times.

6. The method of claim **4**, wherein the media player cannot play the media file after a predetermined period of time.

7. A media player, comprising:

a non-removable storage;

a recording interface; and

a controller, wherein the controller:

receives a plurality of media signals through the recording interface,

stores the plurality of media signals in a media file on the non-removable storage,

receives a disable recording indication, and

in response to the disable recording indication, permanently disabling capability of the media player to record onto the non-removable storage.

8. The player of claim **7**, wherein the plurality of media signals comprises audio signals, video signals, or textual signals.

9. The player of claim **7**, wherein in response to the disable recording indication, the controller permanently disables through the recording interface the capabilities of the media player to record onto the non-removable storage.

10. The player of claim **7**, wherein the controller further plays content from the media file.

11. The player of claim **10**, wherein the media player comprises a non-replaceable and non-rechargeable battery as a power source, wherein the controller cannot play the media file once the battery is fully discharged.

12. The player of claim **10**, wherein the controller cannot play the media file once the media file has been played a predetermined number of times.

13. The player of claim **10**, wherein the controller cannot play the media file after a predetermined period of time.

14. The player of claim **7**, further comprising a system on a chip (SOC), wherein the controller and the non-removable storage are integrated on the SOC.

15. A computer readable storage medium comprising program instructions for recording content onto a media player, the program instructions configured to:

receive a plurality of media signals through a recording interface;

store the plurality of media signals in a media file on a non-removable storage;

receive a disable recording indication; and

in response to the disable recording indication, permanently disable capabilities of the media player to record onto the non-removable storage.

16. The medium of claim **15**, wherein the plurality of media signals comprises audio signals, video signals, or textual signals.

17. The medium of claim **15**, wherein the program instructions configured to permanently disable the capabilities of the media player to record onto the non-removable storage are further configured to:

in response to the disable recording indication, permanently disable through the recording interface the capabilities of the media player to record onto the non-removable storage.

18. The medium of claim **15**, wherein the program instructions are further configured to:

play content from the media file.

19. The medium of claim **18**, wherein the media player comprises a non-replaceable and non-rechargeable battery as a power source, wherein the program instructions are further configured to:

stop playing of the media file once the battery is fully discharged.

20. The medium of claim **18**, wherein the program instructions are further configured to stop playing of the media file after a predetermined period of time.

21. A computer readable storage medium comprising program instructions for recording content onto a media player, the program instructions configured to:

receive a plurality of media signals through a recording interface;

store the plurality of media signals in a media file on a non-removable storage;

receive a disable recording indication; and

permanently disable recording capabilities of the media player in response to the disable recording indication.

22. The medium of claim **21**, wherein the program instructions configured to store the plurality of media signals in the media file on the non-removable storage are further configured to:

convert the plurality of media signals; and

store the converted plurality of media signals in the media file on the non-removable storage.

23. The medium of claim **21**, wherein the program instructions configured to store the plurality of media signals in the media file on the non-removable storage are further configured to:

determine the plurality of media signals comprises an end of media file indication; and

complete the storing of the plurality of signals in the media file on the non-removable storage in response to the end of media file indication.

24. The medium of claim 21, wherein the program instructions configured to permanently disable the recording capabilities of the media player in response to the disable recording indication are further configured to:

permanently disable the recording interface.

25. The medium of claim 21, wherein the program instructions configured to permanently disable the recording capabilities of the media player in response to the disable recording indication are further configured to:

permanently stop accepting any media signals from the recording interface.

26. The medium of claim 21, wherein the program instructions configured to permanently disable the recording capabilities of the media player in response to the disable recording indication are further configured to:

discard any further media signals received from the recording interface.

27. The medium of claim 21, wherein the program instructions configured to permanently disable the recording capabilities of the media player in response to the disable recording indication are further configured to:

physically and permanently disable the recording interface.

28. The medium of claim 21, wherein the program instructions are further configured to:

receive a play indication from a user input interface to play the media file stored in the media player;

retrieve content from the media file;

play the content.

29. The medium of claim 28, wherein the content from the media file comprises additional information about the content, wherein the additional information is displayed.

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