

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ADIONA IP, LLC,)	
)	
Plaintiff,)	
)	Civil Action No. 1:18-cv-670-LPS-CJB
v.)	
)	JURY TRIAL DEMANDED
TIVO CORPORATION,)	
)	
Defendant.)	
_____)	

AMENDED COMPLAINT

For its Complaint, Adiona IP, LLC ("Adiona"), by and through the undersigned counsel, alleges as follows:

THE PARTIES

1. Adiona is a Texas limited liability company with a place of business located at 5068 West Plano Parkway, Suite 300, Plano, Texas 75093.
2. Defendant TiVo Corporation is a Delaware company with, upon information and belief, a place of business located at 2160 Gold Street, San Jose, California 95002.

JURISDICTION AND VENUE

3. This action arises under the Patent Act, 35 U.S.C. § 1 *et seq.*
4. Subject matter jurisdiction is proper in this Court under 28 U.S.C. §§ 1331 and 1338.
5. Upon information and belief, Defendant conducts substantial business in this forum, directly or through intermediaries, including: (i) at least a portion of the infringements alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct and/or deriving substantial revenue from goods and services provided to individuals in this district.

6. Venue is proper in this district pursuant to § 1400(b).

THE PATENTS-IN-SUIT

7. On March 20, 2007, U.S. Patent No. 7,194,520 (the "'520 patent"), entitled "Content Player for Broadcasting to Information Appliances," was duly and lawfully issued by the U.S. Patent and Trademark Office. A true and correct copy of the '520 patent is attached hereto as Exhibit A.

8. On June 17, 2003, U.S. Patent No. 6,580,871 (the "'871 patent"), entitled "Device and Method for Recording an Information Signal in a Record Carrier in which a Temporary Store is Formed on the Record Carrier, the Temporary Store Being Continuously Overwritten with the Information Signal," was duly and lawfully issued by the U.S. Patent and Trademark Office. A true and correct copy of the '871 patent is attached hereto as Exhibit B.

9. Adiona is the assignee and owner of the right, title and interest in and to the '520 and '871 patents, including the right to assert all causes of action arising under said patents and the right to any remedies for infringement of them.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 7,194,520

10. Adiona repeats and realleges the allegations of paragraphs 1 through 9 as if fully set forth herein.

11. Without license or authorization and in violation of 35 U.S.C. § 271(a), Defendant has infringed and continues to infringe at least claim 1 of the '520 patent by making, using, importing, offering for sale, and/or selling, a content broadcaster, including, but not limited to, TiVo Multi-Room Streaming DVR system ("TiVo Multi-Room DVR").

12. Upon information and belief, Defendant used the TiVo Multi-Room DVR via its internal use and testing in the United States, directly infringing one or more claims of the '520 patent.

13. More specifically, the TiVo Multi-Room DVR enables streaming or watching of a TV show or movie in one room and finish watching it in another. The TiVo Multi-Room DVR includes a source device (TiVo DVR) in a room and multiple destination devices (TiVo DVR) in other rooms. The content (movies, TV shows, etc.) received on the source device can be broadcasted on the secondary devices over the Wi-Fi.

Stream and transfer recordings between TiVo DVRs

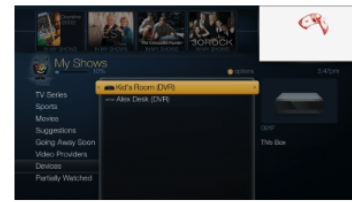
Bring your entertainment to other rooms in your home by streaming or transferring shows between TiVo DVRs.

You can also extend your TiVo experience into other rooms in your home with the TiVo Mini. The TiVo Mini lets you stream shows or live TV from any other TiVo DVR on your network. To learn more, see the [Using the TiVo Mini](#).

This feature is available on:

- All TiVo DVRs

Note: For information on streaming/transferring with TiVo Mini, see [Using the TiVo Mini](#).



With more than one TiVo DVR on your home network, you can easily stream and transfer shows between them.

- 1 Go to the TiVo DVR that you want to stream or transfer shows to.
- 2 From the TiVo Central screen, select 'My Shows.'
- 3 Find the DVR you want to stream or transfer shows from:
 - Highlight the "Devices" category in the left column, then press the RIGHT arrow to move to the right column. Select your DVR.
 - If you are using the "classic" My Shows list (without categories), go to the bottom of the list and select your DVR.
- 4 Find the show you want to stream or transfer from the other TiVo DVR. Highlight it and press 'Select.'
- 5 You'll have the following options:
 - You can start to watch the show immediately (e.g., stream the show), either from the beginning or, if the show was paused, from the pause location.



<https://www.tivo.com/support/how-to/stream-and-transfer-recordings-between-tivo-dvr> (last accessed May 3, 2018).

Multi-Room Streaming.

Multi-Room Streaming lets you watch shows instantly between two or more network-connected TiVo Premiere, TiVo Roamio or TiVo BOLT DVRs. You can pause in one room and finish watching in another, plus access premium content whenever you want, wherever you want.


<https://www.tivo.com/quick-links/welcome-center-roamio/beyond-the-basics> ("Beyond the Basics") (last accessed May 3, 2018).

Streaming. Streaming means watching a video directly from another device; there's no need to transfer or download it first. With the TiVo DVR, you can stream shows to or from another TiVo DVR in your network or from a number of broadband sources. You can also stream to one or more TiVo Minis!

The TiVo Service Quick Guide at p. 4 (available at https://customer.wavebroadband.com/wp-content/uploads/2014/10/TiVo_Guide.pdf (last accessed May 3, 2018)). TiVo DVR such as TiVo Roamio Plus can be connected to the Internet to access various services such as online streaming apps (e.g., Netflix, Amazon Prime). These apps enable streaming of movies and TV shows ("media content") online.

Basic terms

When we talk about the TiVo service, here are some terms you should know:

Live TV. If you're watching a show as it's being broadcast, you're watching live TV. You can pause live TV for up to 30 minutes. When you resume watching, you're "behind" live TV. (You can always get to live TV by pressing the LIVE TV  button on your remote).

Streaming. With the TiVo Roamio, you can stream shows from sources like Amazon, Netflix, and your cable company's video on demand service (if available). You can also stream recordings to or from another TiVo DVR in your network.

Romeo Series Viewer Guide at p. (available at http://assets.tivo.com/assets/resources/HowTo/Roamio_Series_VG.pdf (last accessed May 3, 2018)).

Connect your TiVo® box to your home network

Your TiVo box needs a high-speed Internet connection to receive program listings, TiVo® service updates, and on-demand content. The type of network connection you choose will depend on what you want to do with your TiVo box(es), and whether it's possible to connect an Ethernet cable to your TiVo box(es).

<https://www.tivo.com/support/how-to/how-connect-your-tivo-box-your-home-network> ("How to Connect") (last accessed May 3, 2018).

Check these common network issues first:

1. Check all your power plugs

- Your modem and router should be plugged in with all the indicator lights on.
- After verifying your modem and router have power, go to Step 2.

Note: Wireless connections based on 3G, 4G, 4G LTE, newer or similar technologies are not supported for connecting a TiVo DVR to the internet.

2. Check all your cables

- Verify that your Ethernet cable is securely plugged in between your modem and router.
- Ensure that all connections are securely plugged into the DVR, wireless adapter, and any additional equipment used to connect your DVR to the Internet.
- After verifying all your connections are secure, go to Step 3.

<https://support.tivo.com/articles/Troubleshooting/General-Network-Troubleshooting-Tips> (last accessed May 3, 2018).

TiVo Device	Menu Path (from TiVo Central)
BOLT Series, Roamio Series & TiVo Minis	Settings & Messages > Network Settings > Network Troubleshooting > Internet Connection

Id.

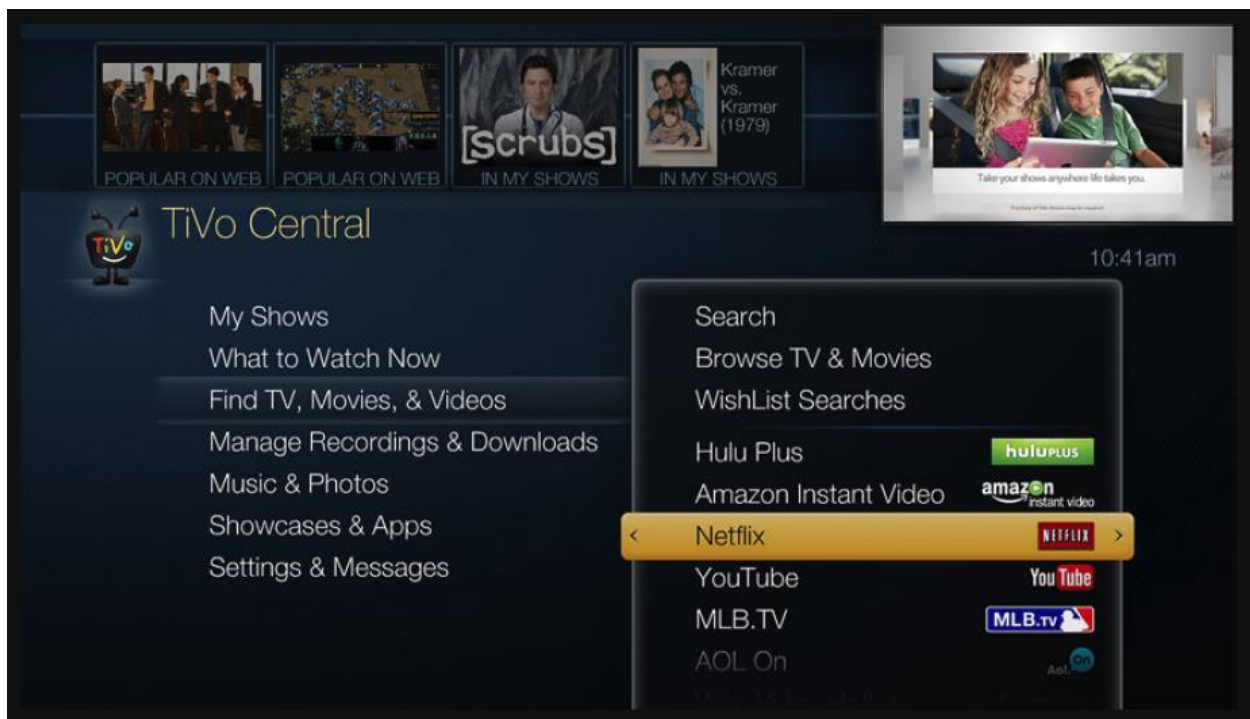
8. After completing the above steps, test the internet connection on your TiVo box.

Id. TiVo DVR is capable of streaming videos from sources like Netflix using the Internet.

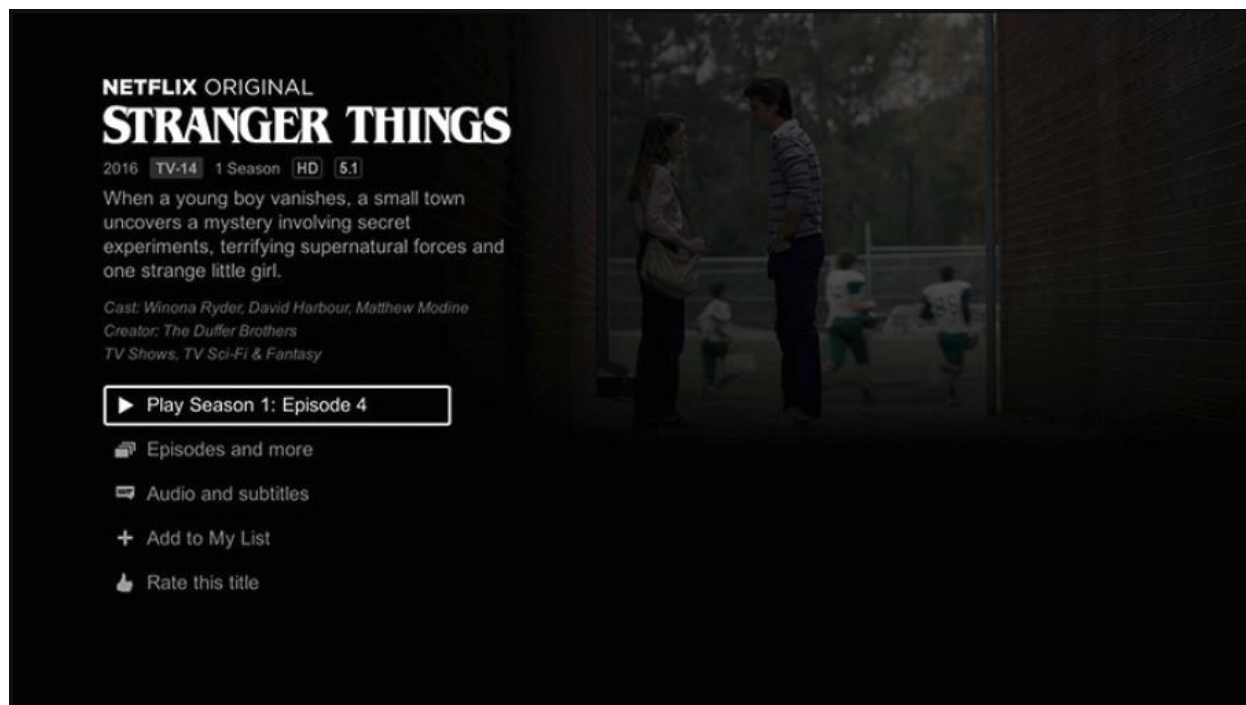
Watch Netflix

When you activate your TiVo box on your Netflix account, you can enjoy Netflix movies and TV episodes, streamed from Netflix right to your TiVo® box!

<https://www.tivo.com/support/how-to/watch-netflix> (last accessed May 3, 2018).



https://www.tivo.com/assets/images_assets/FindTV_Netflix.jpg (last accessed May 3, 2018).



https://www.tivo.com/assets/images_assets/Netflix_ProgramScreen.jpg (last accessed May 3, 2018). The TiVo Roamio Plus DVR contains a Broadcom processor ("controller"), Ethernet to provide Internet connectivity ("network connection"), HDMI port ("display system") to connect a display, USB 2.0 and coax (input/output system) to receive signals. *See* Teardown: TiVo Roamio TCD848000 (available at <http://electronics360.globalspec.com/article/4965/teardown-tivo-roamio-tcd848000> (last accessed May 3, 2018)).

Video	
HDMI out	v1.3 (1080p/24/60)
Composite	Yes
Component	Yes
3D	Passthrough (SxS/TxB)
Audio	
Digital	Optical
Analog	Stereo
Networking	
Wireless	Yes (802.11a/b/g/n)
Ethernet	10/100/1000
MoCA bridge	Built in
Recording	
Simultaneous recordings	6 shows
HD hours	150 hours
Built-in HDD	1 TB
Expandable	eSATA up to 1 TB
Mobile Streaming	
In home	Built in
Out of home	Built in
Extras	
Remote Finder	Yes
RF remote	Yes
Networked boxes supported	up to 11 (with 5 live HD streams)



Inputs/Outputs:

- 1 Power: 110 V
 - 2 Ethernet port: 10/100/1000 Mbps
 - 3 Coax connector for digital cable and MoCA
 - 4 Optical audio out
 - 5 Component output
 - 6 Composite output
 - 7 HDMI (1080p/24/60)
 - 8 External storage port (eSATA)
 - 9 USB 2.0 ports (2)
 - 10 CableCARD slot
- (HDMI, Ethernet and composite cables not included)*

TiVo Roamio Plus ("TiVo Roamio Plus Spec") at p. 2 (available at <https://a.sellpoint.net/a/Xo1D02kq.pdf> (last accessed May 3, 2018)); see also https://www.sqa.org.uk/e-learning/HardOSSupp01CD/page_42.htm (last accessed May 3, 2018). TiVo DVR, such as TiVo Roamio Plus, can be connected to multiple other TiVo DVRs ("plurality of information appliances") over Wi-Fi. Using multi-room streaming, a user has the ability to watch and control a program from any room, i.e., a user, while watching a program through TiVo DVR, can pause a program and can continue watching the program from the paused point using another TiVo DVR installed in another room. TiVo DVRs at multiple are connected to a source TiVo DVR on Wi-Fi such that the destination TiVo DVR receives content from source DVR over Wi-Fi and transfer the pause signal to the source DVR to communicate it to other connected DVRs. Thus, reception of A signal from the source DVR and transmission of a pause signal to the source DVR indicates that a bi-directional link is formed over Wi-Fi between source and destination TiVo DVRs.

Stream and transfer recordings between TiVo DVRs

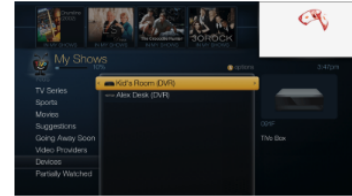
Bring your entertainment to other rooms in your home by streaming or transferring shows between TiVo DVRs.

You can also extend your TiVo experience into other rooms in your home with the TiVo Mini. The TiVo Mini lets you stream shows or live TV from any other TiVo DVR on your network. To learn more, see the [Using the TiVo Mini](#).

This feature is available on:

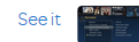
- All TiVo DVRs

Note: For information on streaming/transferring with TiVo Mini, see [Using the TiVo Mini](#).



With more than one TiVo DVR on your home network, you can easily stream and transfer shows between them.

- 1 Go to the TiVo DVR that you want to stream or transfer shows to.
- 2 From the TiVo Central screen, select 'My Shows.'
- 3 Find the DVR you want to stream or transfer shows from:
 - Highlight the "Devices" category in the left column, then press the RIGHT arrow to move to the right column. Select your DVR.
 - If you are using the "classic" My Shows list (without categories), go to the bottom of the list and select your DVR.
- 4 Find the show you want to stream or transfer from the other TiVo DVR. Highlight it and press 'Select.'
- 5 You'll have the following options:
 - You can start to watch the show immediately (e.g., stream the show), either from the beginning or, if the show was paused, from the pause location.



<https://www.tivo.com/support/how-to/stream-and-transfer-recordings-between-tivo-dvr> (last accessed May 3, 2018).

Multi-Room Streaming.

Multi-Room Streaming lets you watch shows instantly between two or more network-connected TiVo Premiere, TiVo Roamio or TiVo BOLT DVRs. You can pause in one room and finish watching in another, plus access premium content whenever you want, wherever you want.

<https://www.tivo.com/quick-links/welcome-center-roamio/beyond-the-basics> ("Beyond the Basics") (last accessed May 3, 2018).

Streaming. Streaming means watching a video directly from another device; there's no need to transfer or download it first. With the TiVo DVR, you can stream shows to or from another TiVo DVR in your network or from a number of broadband sources. You can also stream to one or more TiVo Minis!

The TiVo Service Quick Guide at p. 4 (available at https://customer.wavebroadband.com/wp-content/uploads/2014/10/TiVo_Guide.pdf (last accessed May 3, 2018)).

WATCHING SHOWS ON OTHER TIVO DVRS (TIVO BOLT AND ROAMIO ONLY)

(Not applicable to TiVo Mini.)

When other TiVo DVRs are connected to the same network, you can share recorded shows between them!

Note: For best streaming results, make sure that your TiVo box uses a wired network connection (Ethernet or MoCA).

Streaming or transferring shows is easy:

1. Go to the TiVo DVR that you want to stream or transfer shows to. For this example, let's call it the Bedroom box.
2. From the TiVo Central screen, move to 'My Shows' and press SELECT - the round button at the center of the arrows circle on your remote.
3. Move to the bottom of your My Shows list, to the TiVo DVR you want to stream or transfer shows from. Let's call this the Living Room box.
4. Press SELECT to see the Living Room box's My Shows list.

Note: Some recordings cannot be streamed or transferred due to the copy protection assigned them by the program provider. These recordings are usually marked with a red circle-slash icon.

5. Move to the recording you want to stream or transfer from the other TiVo DVR. Press SELECT.

If you are streaming the recording, you can start to watch it immediately. If you are transferring the recording, you can choose to watch it as it transfers, or continue browsing and choosing shows to transfer. If the show is paused on the Living Room DVR, you'll have the option to watch or transfer it from the paused location, or to watch or transfer it from the beginning. As you watch, you can pause, fast-forward, or rewind the show.

[https://www.tivo.com/assets/pdfs/accessibility/Viewer_guide/04-](https://www.tivo.com/assets/pdfs/accessibility/Viewer_guide/04-Watching_Shows/WatchingShows_03_WholeHome.pdf)

[Watching_Shows/WatchingShows_03_WholeHome.pdf](https://www.tivo.com/assets/pdfs/accessibility/Viewer_guide/04-Watching_Shows/WatchingShows_03_WholeHome.pdf) (last accessed May 3, 2018). As evidenced immediately above, the source TiVo DVR can transmit content to multiple connected

destination TiVo DVRs over Wi-Fi. *See id.* TiVo Multi-Room DVR provides an ability to pause a TV show or movie being viewed in one room and resume it in other. This indicates that when a video (TV show or movie) is paused from a destination TiVo DVR, it sends a signal to the source TiVo DVR about the point of pause such that the source TiVo DVR relays the information about the point at which the video is paused to the other destination TiVo DVRs. Hence, enabling the video to be resumed from that exact point. Thus, the source TiVo DVR on receiving a pause signal from a destination TiVo DVR sends a signal to all the destination TiVo DVRs that the program must begin from the pause point.

Option 1: Wireless

Use this option if you have a TiVo BOLT[®]/BOLT+ or TiVo Roamio[®] Plus/Pro and want to stream shows to your mobile device (not to other TiVo boxes).

This option lets you:

- Transfer shows to/from other DVRs.
- Stream or download shows to iOS[®] and Android[®] devices

Note: TiVo Mini does not support a wireless connection.

How to Connect.

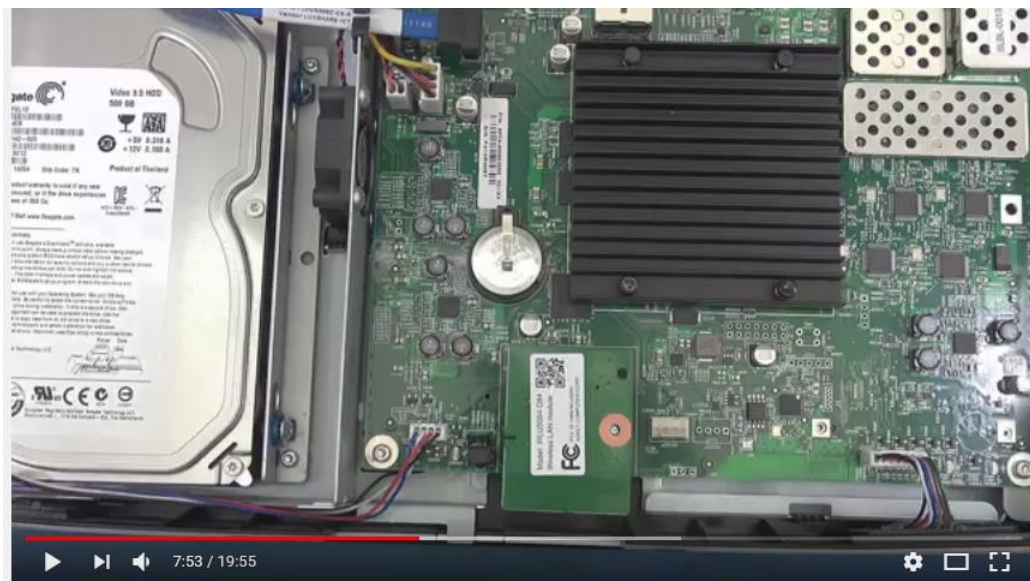
Networking	
Wireless	Yes (802.11a/b/g/n)

TiVo Roamio Plus Spec.

TiVo Roamio Plus DVR communicates with other TiVo DVRs via Wi-Fi (802.11a/b/g/n) using a wireless radio chip. As shown below, the 802.11 uses frequency hopping spread spectrum (FHSS) modulation technique.

Networking	
Wireless	Yes (802.11a/b/g/n)

Id.



<https://www.youtube.com/watch?v=1Fk4cN3EXoY> at 7:53 of 19:55 (last accessed May 3, 2018).



<https://fccid.io/H8N-WLU5054/Internal-Photos/Internal-Photos-1940958> (last accessed May 3, 2018).

BCM4323
Intensi-fi® XLR Single-Chip 802.11n USB Solution

OVERVIEW



Single-chip 802.11n solution for USB adapters.

This member of Broadcom's Intensi-fi® WLAN (Wireless Local Area Network) family enables very small and cost-effective USB adapters that consumers can use to connect PCs, TVs, set-top boxes, personal video recorders and other devices to a Wi-Fi network. As a result of this integration, the Intensi-fi® XLR solution enables smaller, more cost-effective USB adapters that can be used to add high-performance wireless connectivity to devices without built-in Wi-Fi.

Features

- Single-chip 802.11n Baseband/MAC/Radio for single- or dual-band USB devices. BCM4323's dual-band support is ideal for data and media applications.

<https://www.broadcom.com/products/wireless/wireless-lan-infrastructure/bcm4323#overview>

(last accessed May 3, 2018).

There are two types of technologies whose standards are developed by IEEE: 802.11 and 802.11.b. 802.11, uses *FHSS (Frequency Hopping Spread Spectrum)* modulation technique at 2.4 Ghz band and it has a bandwidth of maximum 2 Mbps.

<http://cism.metu.edu.tr/2002-6/ieee.php> (last accessed May 3, 2018).

14. Adiona's initial complaint was filed on May 3, 2018.
15. Defendant was served the initial complaint on May 4, 2018.
16. Thus, Defendant has been on notice of the '520 patent since, at the latest, the

date it was served the Complaint.

17. Upon information and belief, Defendant has not altered its infringing conduct after receiving the initial complaint.

18. Upon information and belief, Defendant's continued infringement despite its knowledge of the '520 patent and the accusations of infringement has been objectively reckless and willful.

19. In particular, Defendant's customers' and end-users' use of Defendant's products that include a content broadcaster, including, but not limited to, the TiVo Multi-Room DVR, is facilitated by the use of the technology patented under the '520 patent. Thus, Defendant's customers and end-users are able to use and benefit from a content broadcaster to stream or watch a TV show or movie in one room and finish watching it in another.

20. On information and belief, in order to generate profits and revenues, Defendant markets and promotes, e.g., through its website, advertising and sales personnel, the use of its products that infringe the '520 patent when used as intended by Defendant's customers and end-users. Defendant's customers and end-users use such products (including, e.g., the TiVo Multi-Room DVR). Defendant further instructs its customers and end-users how to use such products in a manner that infringe the '520 patent (e.g., through on-line technical documentation, instructions, and technical support). Defendant further instructs its customers and end-users to infringe the '520 patent through the products themselves, e.g., through on-line instructions.

21. In particular, Defendant instructs its customers and end-users through at least on-line support instructions and documentation over the Internet how to use the TiVo Multi-Room DVR.

22. Defendant still further makes such products accessible to its customers and end-users via the Internet, thus enabling and encouraging its customers and end-users to use such

products to infringe the '520 patent.

23. On information and belief, even though Defendant has been aware of the '520 patent and that its customers and end-users infringe the '520 patent since no later than May 4, 2018 and Defendant has neither made any changes to the functionality, operations, marketing, sales, technical support, etc. of such products to avoid infringing the '520 patent nor informed its customers or end-users how to avoid infringing the '520 patent. To date, Defendant has not identified a single action that it has taken to avoid infringement (e.g., by designing around or notifying its customers or end-users how to avoid infringement) by itself or its customers or end-users since it became aware of the '520 patent.

24. On information and belief, Defendant itself is unaware of any legal or factual basis that its actions solely, or in combination with the actions of its customers and end-users, do not constitute direct or indirect infringement of the '520 patent. To date, Defendant has not produced any opinion of counsel, request for opinion of counsel, evaluation, analysis, or investigation relating to the validity, scope, interpretation, construction, enforceability, unenforceability, or the infringement or potential infringement of any claim of the '520 patent.

25. As such, on information and belief, despite the information Defendant obtained from the original complaint in this action, Defendant continues to specifically intend for and encourage its customers and end-users to use its products in a manner that infringe the claims of the '520 patent. In addition, since at least the filing of the original complaint in this action, Defendant has deliberately avoided taking any actions (e.g., designing around, or providing notice to its customers) to avoid confirming that its actions continue to specifically encourage its customers and end-users to use its products in a manner that infringe the claims of the '520 patent.

26. Defendant's actions of, *inter alia*, making, importing, using, offering for sale, and/or selling such products constitute an objectively high likelihood of infringement of the '520 patent, which was duly issued by the United States Patent and Trademark Office and is presumed valid. Since at least the filing of the original complaint, Defendant is aware that there is an objectively high likelihood that its actions constituted, and continue to constitute, infringement of the '520 patent and that the '520 patent is valid. Despite Defendant's knowledge of that risk, on information and belief, Defendant has not made any changes to the relevant operation of its accused products and has not provided its users and/or customers with instructions on how to avoid infringement of the '520 patent. Instead, Defendant has continued to, and still is continuing to, among other things, make, use, offer for sale, and/or sell products and/or services patented under the '520 patent. As such, Defendant willfully, wantonly and deliberately infringed and is infringing the '520 patent in disregard of Adiona's rights under the '520 patent.

27. Adiona is entitled to recover from Defendant the damages sustained by Adiona as a result of Defendant's infringement of the '520 patent in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II – INFRINGEMENT OF U.S. PATENT NO. 6,580,871

28. Adiona repeats and realleges the allegations of paragraphs 1 through 27 as if fully set forth herein.

29. Without license or authorization and in violation of 35 U.S.C. § 271(a), Defendant has infringed and continues to infringe at least claim 1 of the '871 patent by making, using, importing, offering for sale, and/or selling, a device for recording an information signal supplied

by a signal source in a record carrier, including, but not limited to, TiVo Roamio OTA VOX ("TiVo Roamio").

30. Upon information and belief, Defendant used the TiVo Roamio via its internal use and testing in the United States, directly infringing one or more claims of the '871 patent.

31. More specifically, the TiVo Roamio has a hard drive that is capable of recording TV shows permanently or temporarily. TiVo Roamio is capable of getting input from antenna or the coax cable or Ethernet port for online streaming.

The Roamio OTA VOX is the one box you need that integrates live, recorded and streaming TV. Catch live, over-the-air programming, like primetime comedies and dramas, the big award shows, sports, local news and more, all for free – or record them and watch when you choose. And you can launch your favorite streaming app, like Netflix, Amazon Video, Hulu, YouTube or many more, without switching inputs or juggling remotes. With the Roamio OTA VOX, we've made freedom easy.



<https://www.tivo.com/shop/ota-detail> (last accessed May 3, 2018).

Specifications

Recording capacity: Up to 150 HD hours

Hard drive size: 1 TB

Id.

TV source

HD antenna (sold separately)


Id.

Internet connection

Built-in wireless

Ethernet port

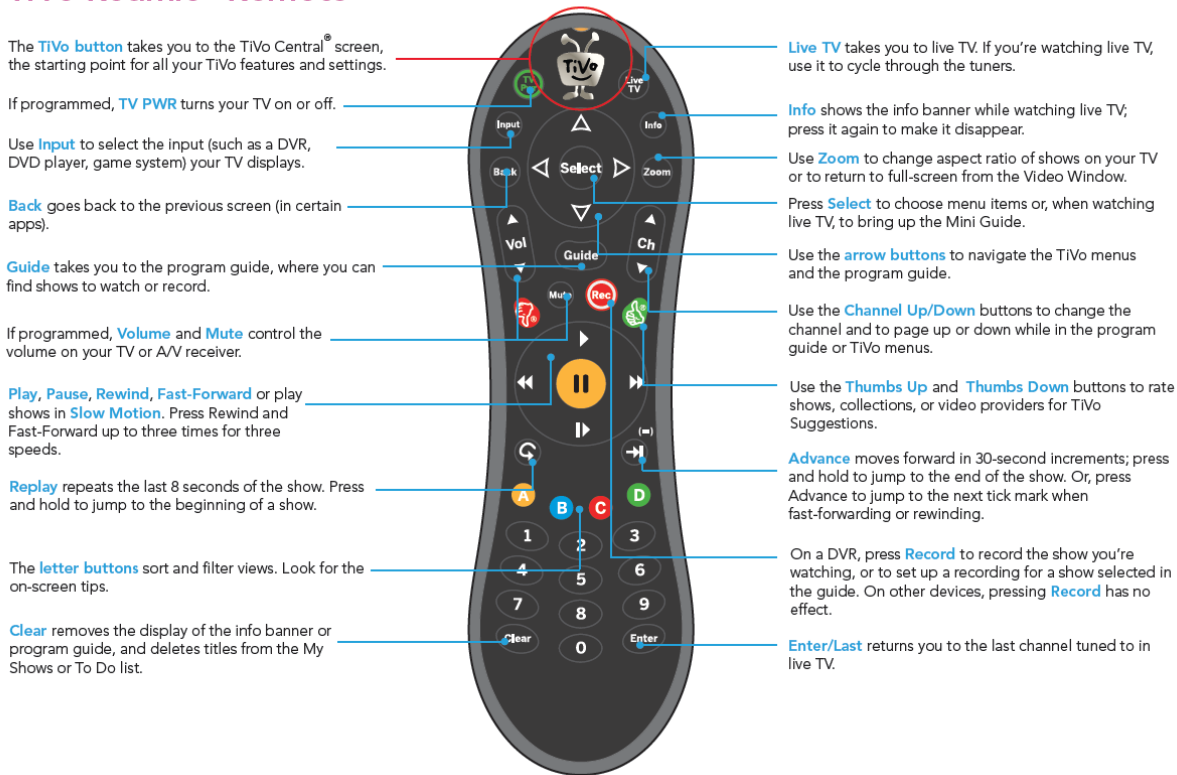
Id. TiVo Roamio comes with four in-built tuners. The function of a tuner is to receive incoming signals and send it for recording in the memory of the DVR or for viewing on TV.

Tuners. A tuner is a device found inside DVRs, TVs, cable boxes — anything designed to receive TV signals, including the TiVo Roamio. A tuner picks one channel to display; it “tunes” to that channel. Your TiVo Roamio Plus and Roamio Pro have six tuners inside and can record up to six shows at once. The four-tuner TiVo Roamio and the TiVo Roamio OTA have four tuners inside. Pressing the LIVE TV  button while watching live TV will cycle through your tuners.

Viewer's Guide (“Viewer's Guide”) at p. v (available at http://assets.tivo.com/assets/resources/HowTo/Roamio_VG_r3_Jan2015.pdf (last accessed May 3, 2018)). TiVo Roamio starts recording a show when the record button is pressed on the remote and recording stops when the record button is pressed again or the stop recording option is used

from the My Shows list. During non-occurrence of record signal or occurrence of stop recording signal, the TV show is stored temporarily. Thus, non-occurrence of record signal or occurrence of stop recording signal can be inferred as wait information.

TiVo Roamio™ Remote



Viewer's Guide at p. 103.

Stopping a recording

You can stop any recording in either of two ways: press the RECORD button while watching live TV, then choose 'Stop the current recording.' Or, from the My Shows list, chose a title that's currently recording, then choose 'Modify recording,' then 'Stop recording.'



Id. at p. 13. Whenever a button on the remote is pressed, the TiVo Roamio receives the command and the processor operates accordingly to select or use the tuner to watch a TV show.

Roamio Series DVRs	Roamio Pro 3TB	Roamio Plus 1TB	Roamio 500GB	Roamio OTA 1TB	Roamio OTA 500GB	Roamio OTA VOX 1TB
TSN Prefix	840	848	846	846	846	846
Model Number	TCD840300	TCD848000	TCD846500	TCD846000	TCD846510	TCD846000V
Recording Capacity	450 HD hours/3K SD hours	150 HD hours/1 K SD hours	75 HD hours/ 500 SD hours	150 HD hours/1 K SD hours	75 HD hours/ 500 SD hours	150 HD hours
Compatible Signal Sources	can ONLY support Digital Cable	can ONLY support Digital Cable	can support Digital Cable or Antenna	can ONLY support Antenna	can ONLY support Antenna	can ONLY support Antenna
Tuners	6	6	4	4	4	4
Inputs	1 coax	1 coax	1 coax	Antenna via coax	Antenna via coax	Antenna via coax
Outputs	1: HDMI, component, & composite	1: HDMI, component, & composite	1 HDMI 1 composite w/breakout cables	1 HDMI 1 composite w/breakout cables	1 HDMI 1 composite w/breakout cables	1 HDMI 1 composite w/breakout cables
Remote	TiVo Roamio Remote*	TiVo Roamio Remote*	TiVo Roamio Remote*	TiVo Roamio Remote*	TiVo Roamio Remote*	Black TiVo Roamio VOX (voice-controlled) Remote with USB dongle and extension cable
Digital Audio Support	Yes (HDMI & optical)	Yes (HDMI & optical)	Yes (HDMI & optical)	Yes (HDMI & optical)	Yes (HDMI & optical)	Yes (HDMI & optical)
USB	2	2	2	2	2	2
Ethernet	Yes	Yes	Yes	Yes	Yes	Yes
MoCA Compatible	Yes	Yes	Yes w/ TiVo Bridge	Yes w/ TiVo Bridge	Yes w/ TiVo Bridge	Yes w/ TiVo Bridge
Wireless Adapter	Internal	Internal	Internal	Internal	Internal	Internal
Cable Card Slots	1	1	1	N/A	N/A	N/A

<https://support.tivo.com/articles/FAQ/TiVo-Service-Number-and-Model-Number-Table#roamio> (last accessed May 3, 2018). As shown in an exemplary case, whenever the TiVo Roamio receives LIVE TV command from the remote, the processor switches the tuner from "Tuner 1" to "Tuner 2" to begin watching the Live TV.

Watching multiple shows at once

Your TiVo Roamio can watch (and record!) multiple shows at the same time -- up to six on the TiVo Roamio Plus and Roamio Pro, and up to four on the TiVo four-tuner TiVo Roamio and TiVo Roamio OTA. Go ahead, try it:


1. First, press PAUSE  to pause the live TV show you're watching. Let's call the tuner you're watching "Tuner 1."
2. Press LIVE TV  to switch to the next tuner, "Tuner 2." Whenever you press LIVE TV, you'll switch to the next tuner in line.

Note: You may see the same channel on more than one tuner.

3. Change the channel if you like, watch the new show for a few moments, then press LIVE TV again to switch to Tuner 3.
4. Change the channel, watch for a few moments, then press PAUSE.

Viewer's Guide at p. 12. When TiVo Roamio receives instructions from the remote to record the show, it starts recording the show in the permanent memory including the 30-minute buffer data at the beginning of the recording. When TiVo Roamio does not receive a record instruction, the shows are recorded for 30 minutes in buffer and after every 30-minute cycle or change of channel, this data is lost or overwritten with new data.

Automatically saving live TV

In live TV, the green segment of the status bar represents the part of the show automatically saved by your TiVo[®] Roamio. The TiVo Roamio automatically saves up to 30 minutes of live TV, so you can rewind live TV for up to 30 minutes. Press RECORD  to record the saved portion as well as the rest of the show.

Whenever you change channels, the saved portion of the old show is cleared, and the TiVo Roamio starts saving the show on the new channel. If you're behind live TV and watching something you still want to see, you should avoid changing the channel. But you can watch another tuner by pressing the LIVE TV button without losing what's been saved.


Id. at p. 43.

Recording the saved portion

Up to 30 minutes of the current channel's broadcast is always being saved, even when you're not recording. When you change channels, the TiVo Roamio clears the saved portion on the tuner you're watching and starts saving again on the new channel. So, if the saved portion is important to you, either record the program or don't change the channel.

To record the saved portion in addition to the rest of the program, choose 'Record this showing.'



Id. at p. 13. TiVo has four in-built tuners. Multiple tuners provide the ability to watch and record multiple shows simultaneously. Each tuner is capable of temporarily recording 30-minutes of data. Thus, selection of a tuner results in selection of a corresponding 30 minutes buffer. This selection of a tuner to watch a program can be inferred to assigning a buffer for storing the TV show temporarily.

Tuners. A tuner is a device found inside DVRs, TVs, cable boxes — anything designed to receive TV signals, including the TiVo Roamio. A tuner picks one channel to display; it "tunes" to that channel. Your TiVo Roamio Plus and Roamio Pro have six tuners inside and can record up to six shows at once. The four-tuner TiVo Roamio and the TiVo Roamio OTA have four tuners inside. Pressing the LIVE TV  button while watching live TV will cycle through your tuners.

Viewer's Guide at p. v.

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1. First, press PAUSE  to pause the live TV show you're watching. Let's call the tuner you're watching "Tuner 1."
2. Press LIVE TV  to switch to the next tuner, "Tuner 2." Whenever you press LIVE TV, you'll switch to the next tuner in line.

Note: You may see the same channel on more than one tuner.

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Up to 30 minutes of the current channel's broadcast is always being saved, even when you're not recording. When you change channels, the TiVo Roamio clears the saved portion on the tuner you're watching and starts saving again on the new channel. So, if the saved portion is important to you, either record the program or don't change the channel.

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Id. at p. 13.

How can TiVo retrieve 30 minutes of a show's previously aired footage? It's possible because TiVo constantly records whatever channel it happens to be tuned to, usually something on the last channel it recorded. TiVo places its constant recordings into a *buffer* — a temporary holding tank that's 30 minutes long.

So, when you press Record, TiVo reaches into its buffer, grabs up to 30 minutes of the current show, and tacks that portion to the beginning of your recording. (If TiVo finds part of an earlier show in the 30 minute buffer, it discards that earlier show, saving only the current one.)

TiVo for Dummies at p. 242 (available at <https://ixz.es/TiVo%20for%20Dummies.pdf> (last accessed May 3, 2018)).

The device is driven by a customized operating system -- for instance, in the case of TiVo, the machine runs on a highly modified Linux installation. The operating system resides on the hard disk, along with the recording space, a buffer for live broadcasts, and in some cases a space for future expansion.

<https://electronics.howstuffworks.com/dvr1.htm> (last accessed May 3, 2018). As shown above, TiVo Roamio has a buffer and automatically records up to 30 minutes of data in buffer. The data is cleared after every 30 minutes or whenever the user changes the channel. When record signal is received, the data is stored in permanently.

32. Adiona's initial complaint was filed on May 3, 2018.

33. Defendant was served the initial complaint on May 4, 2018.

34. Thus, Defendant has been on notice of the '871 patent since, at the latest, the date it was served the Complaint.

35. Upon information and belief, Defendant has not altered its infringing conduct after receiving the initial complaint.

36. Upon information and belief, Defendant's continued infringement despite its knowledge of the '871 patent and the accusations of infringement has been objectively reckless and willful.

37. In particular, Defendant's customers' and end-users' use of Defendant's products that include a device for recording an information signal supplied by a signal source in a record carrier, including, but not limited to, TiVo Roamio, is facilitated by the use of the technology patented under the '871 patent. Thus, Defendant's customers and end-users are able to use and benefit from device having a hard drive that is capable of recording TV shows permanently or

temporarily.

38. On information and belief, in order to generate profits and revenues, Defendant markets and promotes, e.g., through its website, advertising and sales personnel, the use of its products that infringe the '871 patent when used as intended by Defendant's customers and end-users. Defendant's customers and end-users use such products (including, e.g., TiVo Roamio). Defendant further instructs its customers and end-users how to use such products in a manner that infringe the '871 patent (e.g., through on-line technical documentation, instructions, and technical support). Defendant further instructs its customers and end-users to infringe the '871 patent through the products themselves, e.g., through on-line instructions.

39. In particular, Defendant instructs its customers and end-users through at least on-line support instructions and documentation over the Internet how to use the TiVo Roamio.

40. Defendant still further makes such products accessible to its customers and end-users via the Internet, thus enabling and encouraging its customers and end-users to use such products to infringe the '871 patent.

41. On information and belief, even though Defendant has been aware of the '871 patent and that its customers and end-users infringe the '871 patent since no later May 4, 2018 and Defendant has neither made any changes to the functionality, operations, marketing, sales, technical support, etc. of such products to avoid infringing the '871 patent nor informed its customers or end-users how to avoid infringing the '871 patent. To date, Defendant has not identified a single action that it has taken to avoid infringement (e.g., by designing around or notifying its customers or end-users how to avoid infringement) by itself or its customers or end-users since it became aware of the '871 patent.

42. On information and belief, Defendant itself is unaware of any legal or factual

basis that its actions solely, or in combination with the actions of its customers and end-users, do not constitute direct or indirect infringement of the '871 patent. To date, Defendant has not produced any opinion of counsel, request for opinion of counsel, evaluation, analysis, or investigation relating to the validity, scope, interpretation, construction, enforceability, unenforceability, or the infringement or potential infringement of any claim of the '871 patent.

43. As such, on information and belief, despite the information Defendant obtained from the original complaint in this action, Defendant continues to specifically intend for and encourage its customers and end-users to use its products in a manner that infringe the claims of the '871 patent. In addition, since at least the filing of the original complaint in this action, Defendant has deliberately avoided taking any actions (e.g., designing around, or providing notice to its customers) to avoid confirming that its actions continue to specifically encourage its customers and end-users to use its products in a manner that infringe the claims of the '871 patent.

44. Defendant's actions of, *inter alia*, making, importing, using, offering for sale, and/or selling such products constitute an objectively high likelihood of infringement of the '871 patent, which was duly issued by the United States Patent and Trademark Office and is presumed valid. Since at least the filing of the original complaint, Defendant is aware that there is an objectively high likelihood that its actions constituted, and continue to constitute, infringement of the '871 patent and that the '871 patent is valid. Despite Defendant's knowledge of that risk, on information and belief, Defendant has not made any changes to the relevant operation of its accused products and has not provided its users and/or customers with instructions on how to avoid infringement of the '871 patent. Instead, Defendant has continued to, and still is continuing to, among other things, make, use, offer for sale, and/or sell products

and/or services patented under the '871 patent. As such, Defendant willfully, wantonly and deliberately infringed and is infringing the '871 patent in disregard of Adiona's rights under the '871 patent.

45. Adiona is entitled to recover from Defendant the damages sustained by Adiona as a result of Defendant's infringement of the '871 patent in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

JURY DEMAND

Adiona hereby demands a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Adiona requests that this Court enter judgment against Defendant as follows:

- A. An adjudication that Defendant has infringed the '520 and '871 patents;
- B. A judgment that Defendant has induced infringement of the '520 and '871 patents;
- C. An award of damages to be paid by Defendant adequate to compensate Adiona for Defendant's past infringement of the '520 and '871 patents and any continuing or future infringement through the date such judgment is entered, including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;
- D. An award of enhanced damages pursuant to 35 U.S.C. § 284 for Defendant's willful infringement of the '520 and '871 patents subsequent to the date of its notice of the '520 and '871 patents;
- E. A declaration that this case is exceptional under 35 U.S.C. § 285, and an award of Adiona's reasonable attorneys' fees; and

F. An award to Adiona of such further relief at law or in equity as the Court deems just and proper.

Dated: May 16, 2018

STAMOULIS & WEINBLATT LLC

/s/ Richard C. Weinblatt

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