

**UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

CANON, INC.

Plaintiff,

vs.

TCL ELECTRONICS HOLDINGS LTD.,  
TCL CORPORATION,  
SHENZEN TCL NEW TECHNOLOGIES CO.  
LTD.,  
TCL KING ELECTRICAL APPLIANCES  
(HUIZHOU) CO., LTD.,  
TCL KING ELECTRONICS (CHENGDU)  
CO., LTD.,  
TCL KING ELECTRICAL APPLIANCES  
(NANCHANG) CO., LTD.,  
TCL TONGLI ELECTRONICS (HUIZHOU)  
CO., LTD.,  
TONLY ELECTRONICS HOLDINGS LTD.

Defendants.

CIVIL ACTION NO. 2:18-cv-00546

**JURY TRIAL DEMANDED**

**FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Canon, Inc. (“Canon” or “Plaintiff”) brings this First Amended Complaint for Patent Infringement (“Amended Complaint”) and for Jury Trial against Defendants TCL Electronics Holdings Ltd. (formerly known as TCL Multimedia Technology Holdings, Ltd.), TCL Corporation, Shenzen TCL New Technologies Co. Ltd., TCL King Electrical Appliances (Huizhou) Co., Ltd., TCL King Electronics (Chengdu) Co., Ltd., TCL King Electrical Appliances (Nanchang) Co., Ltd., TCL Tongli Electronics (Huizhou) Co., Ltd. and Tonly Electronics Holdings Ltd. (collectively, “TCL” or “Defendants”). Canon alleges as follows:

### **THE PARTIES**

1. Canon is a corporation organized and existing under the laws of Japan. Its principal place of business is located at 30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501, Japan.

2. TCL Electronics Holdings Ltd. is a foreign corporation organized and existing under the laws of the Cayman Islands. On information and belief, its principal place of business is located at 7th Floor, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong.

3. TCL Corporation is a foreign corporation organized and existing under the laws of China. On information and belief, its principal place of business is located at No. 26, the Third Road, Zhongkai Avenue, Huizhou City, Guandong, China 516006.

4. Shenzen TCL New Technologies Co. Ltd. is a foreign corporation organized and existing under the laws of China. On information and belief, its principal place of business is located at TCL Base, No. 5 Nanhai Road, Nanshan District, Shenzen, China 508067.

5. TCL King Electrical Appliances (Huizhou) Co., Ltd. is a foreign corporation organized and existing under the laws of China. On information and belief, its principal place of business is located at No. 78 4th Huifeng Road, Zhongkai New & High-Tech Industries Development Zone, Huizhou, Guandong, China 516006.

6. TCL King Electronics (Chengdu) Co., Ltd. is a foreign corporation organized and existing under the laws of China. On information and belief, its principal place of business is located at No. 18, Kexin Road, West Area, High-Tech Industry Development Zone, Chengdu, Sichuan, China 611731.

7. TCL King Electrical Appliances (Nanchang) Co., Ltd. is a foreign corporation organized and existing under the laws of China. On information and belief, its principal place of business is located at No. 198, Huoju No. 3 Road, High-Tech Industry Development Zone, Nanchang, Jiangxi, China 330096.

8. TCL Tongli Electronics (Huizhou) Co., Ltd. is a foreign corporation organized and existing under the laws of China. On information and belief, its principal place of business is located at 3F, No.1 Building, District D, TCL International E City, No.1001 Zhongshanyuan Road, Nanshan District, Shenzhen, Guangdong, China 518052.

9. Tonly Electronics Holdings Ltd. is a foreign corporation organized and existing under the laws of China. On information and belief, its principal place of business is located at 8th Floor, Bldg 22E, 22 Science Park East Avenue, HK Science Park, Sha Tin, Hong Kong SAR.

### **JURISDICTION AND VENUE**

10. This is an action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code. Accordingly, this Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

11. This Court has personal jurisdiction over Defendants, which it may exercise using the Texas Long Arm Statute. Exercise of such personal jurisdiction is allowed under Due Process because this Court, among other reasons, has specific personal jurisdiction over Defendants.

12. In particular, this Court has specific personal jurisdiction over Defendants at least in part because Defendants conduct business in this judicial District. Canon's causes of action arise, at least in part, from Defendants' contacts with and activities in the State of Texas and this

judicial District. Upon information and belief, Defendants have committed acts of infringement within the State of Texas and this judicial District by, *inter alia*, directly and/or indirectly making, selling, offering for sale, importing, and/or using products that infringe one or more claims of Canon's patents asserted herein. Defendants, directly and/or through intermediaries, use, sell, ship, distribute, offer for sale, and/or advertise or otherwise promote the infringing products in the State of Texas and this judicial District. Defendants also have a number of subsidiaries that Defendants direct and control that, upon information and belief, are involved in making, selling, offering for sale, and/or importing into the United States the infringing products.

13. Furthermore, upon information and belief, Defendants have purposefully and voluntarily placed one or more infringing products into the stream of commerce with the expectation that they will be purchased and/or used by residents of this judicial District, including by directly and indirectly working with distributors, and other entities located in the State of Texas, to ensure the accused products reach the State of Texas and this judicial District.

14. Defendants, directly or through intermediaries, including its subsidiaries, maintain control over websites accessible to residents of the State of Texas and this judicial District, through which Defendants promote and facilitate sales of the infringing products. For example, website <https://www.tclusa.com> directs consumers in the United States, including those in the State of Texas and this judicial District, to purchase Defendants' infringing television systems from online stores, such as Amazon, and brick-and-mortar stores located in this judicial District, including Target, Walmart, Best Buy, and Sam's Club. *See, e.g.*, Ex. 10.

15. Defendants, moreover, have availed themselves to this District in separate lawsuits. For example, in *American Patents LLC v. TCL Corp., et al.*, 4:18-cv-767 (E.D. Tex)

filed on October 26, 2018, TCL King Electrical Appliances (Huizhou) Co. Ltd. filed counterclaims against American Patents LLC. In so doing, Defendants – through TCL King Electrical Appliances (Huizhou) Co. Ltd. – purposefully availed themselves to the protections, powers, and resources of this judicial District. Attached hereto as Exhibit 1 is a true and correct copy of TCL King Electrical Appliances (Huizhou) Co. Ltd.’s Answer to and Counterclaims against American Patents LLC, filed on March 7, 2019.

16. Defendants also availed themselves to this District in *Nichia Corporation v. TCL Multimedia Technology Holdings, Ltd.*, 2:16-cv-1452-JRG (E.D. Tex.) filed on December 27, 2016, where TCL Electronics Holding Ltd. (using its former name, TCL Multimedia Technology Holdings, Ltd.) was dismissed, with prejudice, through an Order of this Court granting an agreed stipulation of dismissal. In so filing an agreed stipulation of dismissal and thereafter obtaining the order of dismissal with prejudice, Defendants – through TCL Electronics Holding Ltd. – purposefully availed themselves to the protections, powers, and resources of this judicial District. Attached hereto as Exhibit 2 is a true and correct copy of an Order Granting Agreed Stipulation of Dismissal, filed on February 16, 2018.

17. Defendants also availed themselves to this District in *Personalized Media Communications, LLC, v. TCL Corp. et al.*, 2:17-cv-433-JRG (E.D. Tex) filed on May 17, 2017, where TCL Corporation and TCL Electronics Holding Ltd. (using its former name, TCL Multimedia Technology Holdings, Ltd.) filed counterclaims against Personalized Media Communications, LLC. In so doing, Defendants – through TCL Corporation and TCL Electronics Holding Ltd. – purposefully availed themselves to the protections, powers, and resources of this judicial District. Attached hereto as Exhibit 3 is a true and correct copy of

Defendants' Answer to and Counterclaims against Personalized Media Communications, LLC, filed on December 4, 2017.

18. Thus, Defendants have established minimum contacts with the State of Texas and the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

19. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391(b), (c) and 1400(b) because (i) Defendants have done and continue to do business in this district; (ii) Defendants have committed and continue to commit acts of patent infringement in this district, including making, using, offering to sell, and/or selling accused products in this district, and/or importing accused products into this district, including by internet sales and sales via retail and wholesale stores, and/or inducing others to commit acts of patent infringement in this district; and (iii) Defendants are foreign entities. 28 U.S.C. § 1391(c)(3) provides that "a Defendant not resident in the United States may be sued in any judicial district."

### **THE CANON PATENTS**

20. On June 29, 2010, the United States Patent & Trademark Office (USPTO) issued United States Patent No. 7,746,413 ("the '413 Patent"), titled "Operation Screen Controlling Method, Operation Screen Controlling Program, and Display Device" to Canon as assignee of the inventors, Keiichi Aoyama, Shigeki Mori, and Shuntaro Aratani. A true and correct copy of the '413 Patent is attached as Exhibit 4 to this Amended Complaint and is incorporated by reference herein.

21. The '413 Patent is generally directed to a display controlling method or system for displaying operation screens that are suitable for various remote controls with various

attributes. The '413 Patent discloses and specifically claims inventive and patentable subject matters that represent significant improvements over conventional display controlling method/system that was available at the time of filing of the '413 Patent and are more than just generic apparatus or software components performing conventional activities.

22. At the time of filing of the '413 Patent, “there has been proposed a television receiver, which is enabled to use a plurality of remote control devices [] by giving priority to the individual remote control devices to improve the operability of the television received” “[i]n case a plurality of remote control devices for controlling a television receiver” were available. Ex. 4 at Col. 1, ll. 17-24. Such proposed television receiver, however, had the problem of its “operation screen of a graphical user interface” being not suited for the attributes and operation devices associated with the remote control device used to control the graphical user interface. *Id.*, Col. 1, ll. 28-30. The '413 Patent’s claimed display controlling method/system solves this problem of “the operability” being “degraded by the remote control device used” by reciting specific and significant improvements over the conventional display controlling method/system, such as, for example, to acquire an attribute of a remote control device, determine the most suitable operation form corresponding to the remote control device’s attribute by evaluating a degree of suitability between the remote control device’s attributes and the operation forms stored by the apparatus as the subject of controlling and display the most suitable operation form. The claims of the '413 Patent are directed to these specific improvements in the capabilities of display controlling technology and devices, not to an abstract process that merely invokes these devices as tools.

23. Given the state of the art at the time of filing of the '413 Patent, the claim limitations of the '413 Patent, both individually and as an ordered combination, were not conventional, well-understood, or routine. The '413 Patent discloses, among other things, an unconventional technological solution to an issue arising specifically in the context of controlling electronic display and communications between electronic devices. The solution implemented by the '413 Patent provides a specific and substantial improvement over prior electronic display and communications systems in electronic devices, including by introducing novel elements combined in an unconventional manner directed to improving the function and working of electronic devices such as, *inter alia*, the claimed “determining an operation form corresponding to the remote control device from among a plurality of operation forms previously stored based on the acquired attribute of the remote control device...wherein, in the step of determining the operation form, the operation form corresponding to the remote control device is determined by evaluating a degree of suitability between the remote control device and each of the plurality of operation forms based on the acquired attribute of the remote control device” (Claim 1). As discussed above, these claimed elements and their combination were not present in the prior art, and represent unconventional and concrete improvements over the prior art.

24. Consistent with the problem addressed being rooted in electronic displays and communications between electronic devices, the '413 Patent's solutions are also rooted in the same technology that cannot be performed with pen and paper or in the human mind. This technical context is reflected in the '413 Patent's claims, as described above.

25. A person having ordinary skill in the art at the time of the inventions of the '413 Patent would not have understood that the inventions could or would be performed solely in the



human mind or using pen and paper. Using pen and paper would ignore the stated purpose of the '413 Patent and the problem the patented technology was specifically designed to address. Doing so would also run counter to the inventors' detailed description of the inventions, and the language of the claims, and be a practical impossibility.

26. On December 13, 2011, the USPTO issued United States Patent No. 8,078,767 ("the '767 Patent"), titled "Display Apparatus, Control Method Thereof, and Program" to Canon as assignee of the inventor, Junji Kotani. A true and correct copy of the '767 Patent is attached as Exhibit 5 to this Amended Complaint and is incorporated by reference herein.

27. The '767 Patent is generally directed to a display method or system that displays an image from an external device for some period of time after being disconnected when the external device is of predetermined class. The '767 Patent discloses and specifically claims inventive and patentable subject matters that represent specific and significant improvements over conventional display method/system that was available at the time of filing of the '767 Patent and are more than just generic apparatus or software components performing conventional activities.

28. At the time of filing of the '767 Patent, "the conventional display apparatus [could] be connected to various devices, and [could] display image data stored in a connected device. However, independently of the device class to be connected, when a communication [was] disconnected, the display operation of an image transmitted from that device end[ed]. For this reason, in addition to the image display end operation that the user intended by removing the flash memory or USB cable, the image display operation often end[ed] without the intention of the user by the control on the device side that logically disconnects a communication

connection.” Ex. 5 at Col. 5, ll. 15-25. The ’767 Patent’s claimed display method/system solved this problem by, for example, reciting the specific method of determining to continue or to end displaying contents retrieved from the external device connected to the display apparatus, at the time of disconnection of the external device, by recognizing and distinguishing among the classes / types of external devices as well as how such device is disconnected from the display apparatus. The claims of the ’767 Patent are directed to these specific improvements in the capabilities of the aforementioned display technology and devices, not to an abstract process that merely invokes these devices as tools.

29. Given the state of the art at the time of filing of the ’767 Patent, the claim limitations of the ’767 Patent, both individually and as an ordered combination, were not conventional, well-understood, or routine. The ’767 Patent discloses, among other things, an unconventional technological solution to an issue arising specifically in the context of controlling electronic display and communications between electronic devices. The solution implemented by the ’767 Patent provides a specific and substantial improvement over prior electronic display and communications systems in electronic devices, including by introducing novel elements combined in an unconventional manner directed to improving the function and working of electronic devices such as, *inter alia*, the claimed “control unit acquir[ing] class information indicating a class of the external device from the external device via said connection unit, control[ing] said display unit to continue the display based on the data received from the external device at the time of disconnection of the communication connection with the external device if the class of the external device indicated by the class information is a predetermined class, and control[ing] said display unit to end the display based on the data received from the external

device at the time of disconnection of the communication connection with the external device if the class of the external device indicated by the class information is not the predetermined class.” (Claim 1). As discussed above, these claimed elements and their combination were not present in the prior art, and represent unconventional and concrete improvements over the prior art.

30. Consistent with the problem addressed being rooted in electronic displays and communications between electronic devices, the ’767 Patent’s solutions are also rooted in the same technology that cannot be performed with pen and paper or in the human mind. This technical context is reflected in the ’767 Patent’s claims, as described above.

31. A person having ordinary skill in the art at the time of the inventions of the ’767 Patent would not have understood that the inventions could or would be performed solely in the human mind or using pen and paper. Using pen and paper would ignore the stated purpose of the ’767 Patent and the problem the patented technology was specifically designed to address. Doing so would also run counter to the inventors’ detailed description of the inventions, and the language of the claims, and be a practical impossibility.

32. On January 1, 2013, the USPTO issued United States Patent No. 8,346,986 (“the ’986 Patent”), titled “Display Apparatus, Control Method Thereof, and Program” to Canon as assignee of the inventor, Junji Kotani. A true and correct copy of the ’986 Patent is attached as Exhibit 6 to this Amended Complaint and is incorporated by reference herein.

33. The ’986 Patent is generally directed to a display method or system that displays an image from an external device for some period of time after being disconnected when the type of external device is of a class and/or when the disconnection was logical or physical. The ’986 Patent discloses and specifically claims inventive and patentable subject matters that represent

specific significant improvements over conventional display method/system that was available at the time of filing of the '986 Patent and are more than just generic apparatus or software components performing conventional activities.

34. At the time of filing of the '986 Patent, “the conventional display apparatus [could] be connected to various devices, and [could] display image data stored in a connected device. However, independently of the device class to be connected, when a communication [was] disconnected, the display operation of an image transmitted from that device end[ed]. For this reason, in addition to the image display end operation that the user intended by removing the flash memory or USB cable, the image display operation often end[ed] without the intention of the user by the control on the device side that logically disconnects a communication connection.” Ex. 6 at Col. 5, ll. 15-25. The '986 Patent's claimed display method/system solved this problem by, for example, reciting the specific method of determining to continue or to end displaying contents retrieved from the external device connected to the display apparatus, at the time of disconnection of the external device, by recognizing and distinguishing among the classes / types of external devices as well as how such device is disconnected from the display apparatus. The claims of the '986 Patent are directed to these specific improvements in the capabilities of the aforementioned display technology and systems, not to an abstract process that merely invokes these systems as tools.

35. Given the state of the art at the time of filing of the '986 Patent, the claim limitations of the '986 Patent, both individually and as an ordered combination, were not conventional, well-understood, or routine. The '986 Patent discloses, among other things, an unconventional technological solution to an issue arising specifically in the context of controlling

electronic display and communications between electronic devices. The solution implemented by the '986 Patent provides a specific and substantial improvement over prior electronic display and communications systems in electronic devices, including by introducing novel elements combined in an unconventional manner directed to improving the function and working of electronic devices such as, *inter alia*, the claimed “determination unit configured to determine whether or not to continue the display of the image received from the external device by detecting whether the communication is physically disconnected or whether the communication is logically disconnected when the communication with the external device is disconnected” (Claim 1). As discussed above, these claimed elements and their combination were not present in the prior art, and represent unconventional and concrete improvements over the prior art.

36. Consistent with the problem addressed being rooted in electronic displays and communications between electronic devices, the '986 Patent's solutions are also rooted in the same technology that cannot be performed with pen and paper or in the human mind. This technical context is reflected in the '986 Patent's claims, as described above.

37. A person having ordinary skill in the art at the time of the inventions of the '986 Patent would not have understood that the inventions could or would be performed solely in the human mind or using pen and paper. Using pen and paper would ignore the stated purpose of the '986 Patent and the problem the patented technology was specifically designed to address. Doing so would also run counter to the inventors' detailed description of the inventions, and the language of the claims, and be a practical impossibility.

38. On April 29, 2014, the USPTO issued United States Patent No. 8,713,206 (“the '206 Patent”), titled “Display Apparatus, Control Method Thereof, and Program” to Canon as the

assignee of the inventor, Junji Kotani. A true and correct copy of the '206 Patent is attached as Exhibit 7 to this Amended Complaint and is incorporated by reference herein.

39. The '206 Patent is generally directed to a display method or system that displays an image from an external device for some period of time after being disconnected, the period of time varying based on the type of external device and/or whether the disconnection was logical or physical. The '206 Patent discloses and specifically claims inventive and patentable subject matters that represent specific and significant improvements over conventional display method/system that was available at the time of filing of the '206 Patent and are more than just generic apparatus or software components performing conventional activities.

40. At the time of filing of the '206 Patent, “the conventional display apparatus [could] be connected to various devices, and [could] display image data stored in a connected device. However, independently of the device class to be connected, when a communication [was] disconnected, the display operation of an image transmitted from that device end[ed]. For this reason, in addition to the image display end operation that the user intended by removing the flash memory or USB cable, the image display operation often end[ed] without the intention of the user by the control on the device side that logically disconnects a communication connection.” Ex. 7 at Col. 5, ll. 19-29. The '206 Patent's claimed display method/system solved this problem by, for example, reciting the specific method of determining to continue or to end displaying contents retrieved from the external device connected to the display apparatus, at the time of disconnection of the external device, by recognizing and distinguishing among the classes / types of external devices as well as how such device is disconnected from the display apparatus. The claims of the '206 Patent are directed to these specific improvements in the

capabilities of the aforementioned display technology and systems, not to an abstract process that merely invokes these systems as tools.

41. Given the state of the art at the time of filing of the '206 Patent, the inventive concepts of the '206 Patent were not conventional, well-understood, or routine. The '206 Patent discloses, among other things, an unconventional technological solution to an issue arising specifically in the context of controlling electronic display and communications between electronic devices. The solution implemented by the '206 Patent provides a specific and substantial improvement over prior electronic display and communications systems in electronic devices, including by introducing novel elements directed to improving the function and working of electronic devices such as, *inter alia*, the claimed “display control unit [that] varies a period of time from the disconnection to the stopping of the display of the image depending on a determination result as to whether the disconnection of the communication with the external device is a physical disconnection or a logical disconnection.” (Claim 7). As discussed above, these claimed elements and their combination were not present in the prior art, and represent unconventional and concrete improvements over the prior art.

42. Consistent with the problem addressed being rooted in electronic displays and communications between electronic devices, the '206 Patent's solutions are also rooted in the same technology that cannot be performed with pen and paper or in the human mind. This technical context is reflected in the '206 Patent's claims, as described above.

43. A person having ordinary skill in the art at the time of the inventions of the '206 Patent would not have understood that the inventions could or would be performed solely in the human mind or using pen and paper. Using pen and paper would ignore the stated purpose of the

'206 Patent and the problem the patented technology was specifically designed to address. Doing so would also run counter to the inventors' detailed description of the inventions, and the language of the claims, and be a practical impossibility.

44. On October 5, 2010, the USPTO issued United States Patent No. 7,810,130 ("the '130 Patent"), titled "Method and Apparatus of Power Management for Moving Image-Streaming Content" to Canon as assignee of the inventors Atsushi Mizutome and Masaki Kutsuna. A true and correct copy of the '130 Patent is attached as Exhibit 8 to this Amended Complaint and is incorporated by reference herein.

45. The '130 Patent is generally directed to a method and system for buffering streaming contents while the contents are not being displayed on a television either while the television's power is off or while the user is viewing other programs. The '130 Patent discloses and specifically claims inventive and patentable subject matters that represent specific and significant improvements over conventional method/system for streaming internet contents on a television that was available at the time of filing of the '130 Patent and are more than just generic apparatus or software components performing conventional activities.

46. At the time of filing of the '130 Patent, the inventor recognized that a "conventional broadcast system is currently being shifted to a digital broadcast system in which television signals are transmitted as digital signals" and the "shift to the digital broadcast system is underway to enhance image quality and to increase the number of channels by utilizing digital transmission and coding technologies." Ex. 8 at Col. 1, ll. 19-24. The inventor of the '130 Patent further observed that at the time of filing of the '130 Patent, "it [was] becoming widespread to use the Internet to provide a distribution of moving images comparable in quality



to that of the television broadcast, that is, a distribution of streaming contents” but unlike television broadcast receiving, “the streaming broadcast is not received immediately after calling up a desired channel.” *Id.* at Col. 1, ll. 27-42. The inventor, then, proposed that “in the near future, while communication infrastructures are improved in the individual households, it becomes widespread to enjoy the streaming broadcast, as well as the conventional television broadcast, on television in living rooms” where the users of such streaming system would demand “to select and audiovisually enjoy a program (contents) of the streaming broadcast in such a manner as to feel as comfortable as in the conventional television broadcast.” *Id.* at Col. 2, ll. 6-17. After recognizing this future needs, the inventor foresaw potential problems that the ’130 Patent proposes to solve, namely, “a general television audience is accustomed to watching television, that is, being able to audiovisually enjoy a desired program immediately after turning on a power and selecting a corresponding channel. Therefore, it is impractical for the television audience himself/herself to find out main data and a location (address (and a file name)) of streaming contents that he/she wishes to audiovisually enjoy, and to perform the pull-type operation for receiving distributed contents based on the found data. Thus, it is necessary to provide a form capable of selecting and audiovisually enjoying contents by a simpler method such that the audience feels as comfortable as when audiovisually enjoying a television program.” *Id.* at Col. 2, ll. 25-38. As another problem the inventor sought to solve, the inventor recognized that “unlike the general process for receiving the television broadcast, the receiving process for the streaming contents requires a time period of several to ten and several seconds at the time of switching the streaming contents which corresponds to the time of changing channels on television. Meanwhile, the user must wait for the same time period...for buffering...desired

streaming contents in a distribution side server and a time period required for buffering a predetermined amount of the streaming contents on a receiving terminal side.” *Id.* at Col. 2, ll. 45-53. The ’130 Patent’s claimed buffering method/system solves these problems addressed above by reciting significant improvements over the conventional television system and method of streaming contents, namely, for example, to store URL information associated with the desired streaming contents, to access the URLs repeatedly while the TV is turned off or while the TV is displaying broadcast programs, to buffer the streaming contents while the TV is turned off or while the TV is displaying broadcast programs and to display the buffered contents after the TV is turned back on or controlled to switch from displaying broadcast programs to displaying streaming contents again. The claims of the ’130 Patent are directed to these specific improvements in the capabilities of the aforementioned buffering technology and systems, not to an abstract process that merely invokes these systems as tools.

47. Given the state of the art at the time of filing of the ’130 Patent, the inventive concepts of the ’130 Patent were not conventional, well-understood, or routine. The ’130 Patent discloses, among other things, an unconventional technological solution to an issue arising specifically in the context of electronic buffering and streaming devices and communications between electronic devices. The solution implemented by the ’130 Patent provides a specific and substantial improvement over prior electronic buffering, streaming and communications systems in electronic devices, including by introducing novel elements directed to improving the function and working of electronic devices such as, *inter alia*, the claimed “control unit for (1) controlling, responsive to the receiving by the operation unit of the operation of turning off the power source, to read out the URL information stored in the memory unit, and (2) controlling,

while the power source is in an off state, to periodically repeat accessing of a URL of the moving image-streaming content which had been displayed before turning off the power source, so as to receive by the receiving unit and to buffer in the buffering unit the latest moving image-streaming content, and (3) controlling, responsive to the receiving by the operation unit of the operation of turning on the power source, to read out from the buffering unit the latest buffered moving image-streaming content and to start the displaying on the display screen of the latest buffered moving image-streaming content” (Claim 1). As discussed above, these claimed elements and their combination were not present in the prior art, and represent unconventional and concrete improvements over the prior art.

48. Consistent with the problem addressed being rooted in electronic streaming, buffering and communications between electronic devices, the ’130 Patent’s solutions are also rooted in the same technology that cannot be performed with pen and paper or in the human mind. This technical context is reflected in the ’130 Patent’s claims, as described above.

49. A person having ordinary skill in the art at the time of the inventions of the ’130 Patent would not have understood that the inventions could or would be performed solely in the human mind or using pen and paper. Using pen and paper would ignore the stated purpose of the ’130 Patent and the problem the patented technology was specifically designed to address. Doing so would also run counter to the inventors’ detailed description of the inventions, and the language of the claims, and be a practical impossibility.

50. Canon is the sole owner of the entire right, title and interest in and to the ’413, ’767, ’986, ’206 and ’130 Patents (collectively, the “Asserted Patents”), including the right to sue and recover for any and all infringements thereof. While the Asserted Patents reference “Canon

Kabushiki Kaisha” as their Assignee, “Canon Kabushiki Kaisha” is a Japanese translation for Canon Inc. and is an identical entity as Canon Inc., the plaintiff of this action.

51. The Asserted Patents are valid and enforceable.

**DEFENDANTS’ INFRINGING PRODUCTS AND ACTIVITIES**

52. Defendants, directly or through intermediaries, including its subsidiaries, make, use, sell, offer to sell within the United States and/or import into the United States and this District infringing television systems that integrate the Roku operation system (“Roku OS”) (henceforth, “Roku TV”).

53. Certain Roku TVs comprise a television that displays a number of operation screens, each with a number of operation forms that can be and are displayed, depending on the remote control device being used. They are capable of acquiring an attribute of a remote control device and determining an operation form corresponding to the remote control device from among a plurality of operation forms based on the acquired attribute of the remote control device by evaluating a degree of suitability between the remote control device and the plurality of operation forms and display an operation screen related to the determined operation form displayed.

54. Certain Roku TVs, moreover, comprise a television to which various classes / types of external devices can be connected; contents retrieved from these various external devices can be displayed on the system’s display. Furthermore, each of these Roku TVs are capable of recognizing and also distinguishing among the classes / types of external devices connected to the television. Depending on the class / type of the external device connected to the system, the Roku TVs are capable of determining whether to continue (or to end) displaying

contents retrieved from the external device when such device is disconnected. And, depending on the class / type of the external device connected to the system and how such device is disconnected from the system, the Roku TVs are capable of determining whether to continue (or to end) displaying contents retrieved from the external device when such device is disconnected.

55. Certain Roku TVs comprise a television to which various types of external devices can be connected; content retrieved from these various external devices can be displayed on the system's display. Furthermore, each of these Roku TVs is capable of and does recognize and distinguish among the types of external devices connected to the television. Depending on the type of the external device connected to the system, the Roku TVs are capable of varying the timing for stopping the display of contents retrieved from the external device after such device is disconnected. And, depending on the type of the external device connected to the system and how such device is disconnected from the system, the Roku TVs are capable of varying the timing for stopping the display of contents retrieved from the external device after such device is disconnected.

56. Certain Roku TVs comprise a television capable of receiving and displaying streaming contents over the Internet. Furthermore, each of these Roku TVs is capable of storing URL information associated with the streaming contents, accessing the URLs while the TV is turned off or while the TV is displaying broadcast programs, buffering the streaming contents while the TV is turned off or while the TV is displaying broadcast programs and displaying the buffered contents after the TV is turned back on or controlled to switch from displaying broadcast programs to displaying streaming contents again.

57. Infringing products include, among others, the following Roku TVs: 3-series TV systems (e.g., Models 32S325, 40S325, 43S325, 49S325, 28S305, 32S301, 32S305, 32S327, 40S303, 40S305, 43S303, 43S305, 49S303, and 49S305), 4-series TV systems (e.g., Models 43S421, 50S421, 55S421, 65S421, 43S423, 75S423, 75S425, 43S403, 43S405, 43S425, 49S403, 49S405, 49S425, 50S423, 50S425, 55S423, 55S425, 55S401, 55S403, 55S405, 65S401, 65S403, 65S405, 65S423 and 65S425), 5-series TV Systems (e.g., Models 43S515, 43S517, 49S515, 49S517, 55S515, 55S517, 65S515 and 65S517), 6-series TV Systems (e.g., Models 75R517, 55R613, 55R615, 55R617, 65R615, 65R617, 75R617 and 75R615), P6-series TV Systems (e.g., Models 55P605 and 55P607), and C8-series TV Systems (e.g., Models 55C803, 55C807, 65C807, 75C803 and 75C807), S-series TV systems (e.g., 32S3700, 40FS3750, 65US5800, 55US5800, 32S3700, 40F3750, 32S3750, 28S3750, 32S3850A, 32S3850B, 32S3850P, 32S3850, 55FS3750, 48FS3750, 55FS3850, 50FS3850, 32S3800, 50FS3800, 40FS3800, 40FS3850, 40FS4610R, 48FS3700, 48FS4610R, 55FS3700, 55FS4610R), P-series TV systems (e.g., 55UP130, 43UP130, 50UP130, 55UP120, 50UP120, 43UP120, 49FP110, 43FP110) (collectively, the “Accused Products”).

58. On information and belief, Defendants introduced its first Roku TV in August 2014. *See, e.g.*, Ex. 9 (TCL Launches Premium Roku TV Models, May 13, 2015 Press Release) (“TCL Roku TVs feature a personalized home screen with access to all entertainment sources, making it easy to navigate between gaming console, cable or satellite box, and the more than 2,000 streaming channels . . .”).

59. Defendants, directly or through intermediaries, including its subsidiaries, maintain websites targeting consumers in the United States; these websites identify various retail stores

within this District as places where the Accused Products can be purchased. For example, one website directs consumers to purchase Defendants' Model 55C807 at Amazon, BrandsMart, Walmart, and other retail stores:

# ROKU SMART TV - 55C807

MODEL 55C807

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## SCREEN SIZE

<b>55"</b> \$699.99	<b>65"</b> \$1,099.99	<b>75"</b> \$1,999.99
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## FEATURES

- Dolby Vision HDR
- HDR Dynamic Contrast
- Wide Color Gamut with TCL's NBP Photon Technology
- Roku TV Smart Platform with thousands of streaming channels
- Enhanced Remote with Voice Search and Private Listening
- High-speed 802.11ac wireless and Ethernet networking
- (3) HDMI 2.0a ports with HDCP 2.2

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# \$699.99

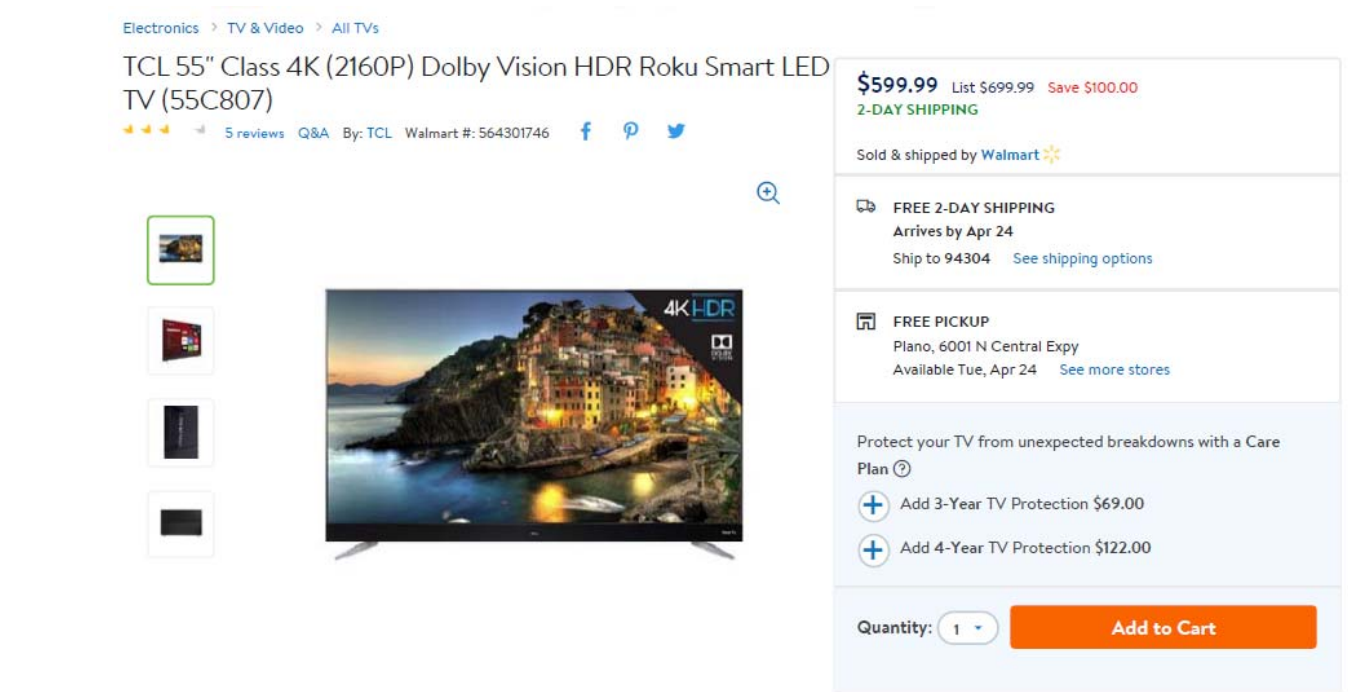
SUGGESTED PRICE

## WHERE TO BUY ▾

Amazon	<a href="#">↗</a>
BrandsMart	<a href="#">↗</a>
Curacao	<a href="#">↗</a>
Electronics Express	<a href="#">↗</a>
Nebraska Furniture Mart	<a href="#">↗</a>
Walmart	<a href="#">↗</a>



Ex. 10 (<https://www.tclusa.com/products/home-theater/c-series/tcl-55-class-c-series-4k-uhd-hdr-roku-smart-tv-55c807>). These retail stores allow consumers to pick up Accused Product at local stores, such as a Walmart store located at 6001 N. Central Expressway, Plano TX 75023, an address that is within this District.



Ex. 11 (<https://www.walmart.com/ip/TCL-55-Class-4K-2160P-Dolby-Vision-HDR-Roku-Smart-LED-TV-55C807>).

**COUNT I**  
**(Direct Infringement of the '413 Patent pursuant to 35 U.S.C. § 271(a))**

60. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

61. Defendants, directly or through intermediaries, including its subsidiaries, have directly infringed and continue to directly infringe Claims 1-5, 7-11 of the '413 Patent literally

and/or under the doctrine of equivalents, by making, using, selling, or offering to sell within the United States, and/or importing into the United States, among others, models 43UP130, 50UP130, 55UP130, 55C807, 65C807, 75C807, 55P607, 55S517, 65S517, 43S517, 49S517, 55R613, 55R617, 65R617, 75R615, 75R617 and 55P607 that can be used with the TCL Roku Enhanced Remote Control (“collectively, “’413 Accused Products”).

62. Defendants’ acts of making, using, importing, selling, and/or offering for sale the ’413 Accused Products have been without the permission, consent, authorization or license of Canon.

63. In particular, the ’413 Accused Products practice the patented invention of the ’413 Patent, and the ’413 Accused Products meets each and every limitation of the apparatus claims of the ’413 Patent, including the capability to display operation screens that are suitable for various remote controls with various attributes. Accordingly, Defendants’ making, using, importing, selling, and/or offering for sale the ’413 Accused Products infringe the apparatus claims of the ’413 Patent.

64. Furthermore, the ’413 Accused Products practice the patented invention of the ’413 Patent, and Defendants’ use of the ’413 Accused Products infringes the method claims of the ’413 Patent because such use leads to the performing of each and every step of the claimed methods, including displaying operation screens that are suitable for various remote controls with various attributes.

65. To the extent the ’413 Accused Products contain modules, components or software owned by third parties, including Roku Inc. (“Roku”) and various third party CDN service providers, Defendants still infringe the ’413 Patent because (a) Defendants are the final

assembler of all modules, components and/or software in the accused system and thereby make the '413 Accused Products, (b) Defendants use, sell and import the '413 Accused Products into the United States by directing and authorizing third parties – including TTE Technology Inc. (“TTE”), a wholly-owned subsidiary of TCL Electronics Holding Ltd., and Roku – to use the accused features of the '413 Accused Products for the purpose of testing and marketing within the United States and/or to import into the United States and sell the '413 Accused Products in the United States, and (c) Defendants are vicariously liable for other third parties' use, including end users' use, of the accused system by controlling the entire system and deriving a benefit from the use of every element of the entire system.

66. Similarly, to the extent the third parties perform a step or steps of the patented method and/or the '413 Accused Products incorporate third parties' modules, components or software that perform one or more patented steps, Defendants still infringe the '413 Patent because (a) Defendants are vicariously liable for third parties' use, including TTE's use, of the '413 Accused Products thereby performing the patented method steps and/or (b) Defendants condition receipt by the third parties of a benefit upon performance of a step or steps of the patented method and establish the manner or timing of that performance.

67. For example, according to TCL Electronics Holding Ltd.'s Annual Report (2018), “Management monitors the results of the Group's operating segments separately for the purpose of making decisions about resources allocation and performance assessment” where the Group's operating segments include various third party subsidiaries of TCL Electronics Holding Ltd., including TTE. See Ex. 19 at 17. Upon information and belief, Defendants maintain a “vertically integrated supply chain” and direct and authorize third parties, including TTE, to use,

sell and/or import to the United States products, including the '413 Accused Products, through the “vertically integrated supply chain.” See Ex. 20 (<https://www.tclusa.com/about-us/press-release/tcl-north-american-growth>) (“With extensive manufacturing expertise, a vertically integrated supply chain, and state-of-the-art panel factory, TCL offers innovative televisions, including the award-winning TCL® Roku TV™.”).

68. As a way of illustration, each of the '413 Accused Products displays a voice control operation screen for certain remote control devices that have a voice control attribute without a touch panel attribute. Upon information and belief, the '413 Accused Products accomplish this by acquiring an attribute of a remote control device and determining the operation form suitable for the remote control device by evaluating a degree of suitability between the remote control device and the plurality of operation forms available to them. The '413 Accused Products may be operated through voice commands when the voice command button on an enhanced remote control, such as a magnifying glass button, as shown below, is pressed. An operation screen is then displayed on the television, displaying a microphone and a message to hold the microphone button and speak, also as shown below.<sup>1</sup>

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<sup>1</sup> All pictures shown in this Complaint are of TCL Model 55C807.



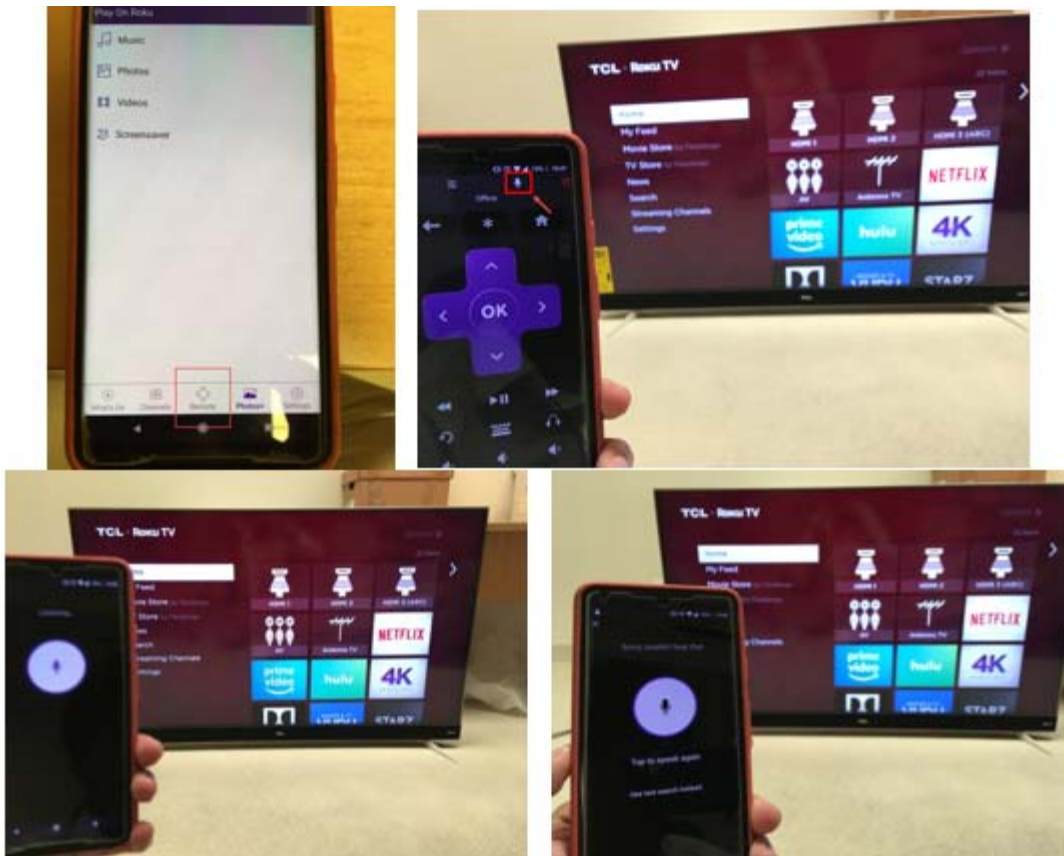
69. As shown below, if the '413 Accused Product does not detect or recognize the voice command, a different form is displayed prompting the user to retry the voice search, or to click one of two options: (1) text search, or (2) cancel the voice control process.



70. If “Text search” is selected, another operation form is displayed, allowing the user to type in text by navigating an on-screen keyboard using the enhanced remote control, as shown below.



71. The operation forms shown above do not display when the voice control button is pressed on a smartphone’s virtual remote. Instead, the voice prompt and the operation forms are displayed on the smartphone, not the television, as shown below.



72. If “Use text search instead” is selected, a keyboard appears on the phone, but not on the TV, as shown below.



73. Accordingly, Defendants have infringed and are continuing to infringe the '413 Patent.

74. As a result of Defendants' direct infringement of the '413 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' direct infringement, including without limitation not less than a reasonable royalty, together with interest and costs as determined by the Court.

75. Defendants' direct infringement of the '413 Patent has caused and is causing damage and irreparable injury to Canon, and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

76. Defendants, moreover, are committing willful infringement of the '413 Patent because Defendants (1) continue to commit direct infringement of the '413 Patent, and (2) have



had knowledge of the '413 Patent since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '413 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. See Dkt. No. 1.

**COUNT II**  
**(Induced Infringement of the '413 Patent pursuant to 35 U.S.C. §271(b))**

76. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

77. Defendants have induced and are continuing to induce infringement of Claims 1-5, 7-11 of the '413 Patent by taking active steps to encourage and facilitate direct infringement by others, including agent-subsidaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, in this District and elsewhere in the United States, through the dissemination of the '413 Accused Products and the creation and dissemination of promotional and marketing materials, supporting materials, instructions, product manuals, and/or technical information relating to such products with knowledge and the specific intent that their efforts will result in the direct infringement of the '413 Patent.

78. On information and belief, at the behest of Defendants and as a direct result of their instigation, control, and direction, acting as their agents TTE and/or Roku thus offered for sale and sold in the United States, and imported into the United States, without authorization, the '413 Accused Products.

79. For example, according to TCL Electronics Holding Ltd.'s Annual Report (2018), "Management monitors the results of the Group's operating segments separately for the purpose of making decisions about resources allocation and performance assessment" where the Group's operating segments include various third party subsidiaries of TCL Electronics Holding Ltd.,

including TTE. See Ex. 19 at 17. Upon information and belief, Defendants maintain a “vertically integrated supply chain” and direct and authorize third parties, including TTE, to use, sell and/or import to the United States products, including the ’413 Accused Products, through the “vertically integrated supply chain.” See Ex. 20 (<https://www.tclusa.com/about-us/press-release/tcl-north-american-growth>) (“With extensive manufacturing expertise, a vertically integrated supply chain, and state-of-the-art panel factory, TCL offers innovative televisions, including the award-winning TCL® Roku TV™.”).

80. Defendants have also induced and are continuing to induce infringement of Claims 1-5, 7-11 of the ’413 Patent by encouraging, instructing, and/or directing third parties, including end users, to use the ’413 Accused Products in a way that directly infringes the ’413 Patent, either literally or under the doctrine of equivalents.

81. Each of the ’413 Accused Products meets all limitations of the apparatus claims of the ’413 Patent. See Count I above. Thus, third parties, including end users, who use the ’413 Accused Products in the United States, also directly infringe the apparatus claims of the ’413 Patent.

82. For example, Defendants, directly or through intermediaries, including its subsidiaries, make available make available to third parties instructions on how to use the ’413 Accused Products. See, e.g., Ex. 12 (TCL C-Series User Guide 8.0); Ex. 13 (TCL C-Series Quick Start Guide); Ex. 14 (<https://www.tclusa.com/blog/youtube-tv-streaming-channel>); Ex. 15 (<https://www.tclusa.com/blog/how-to-watch-local-channels-without-cable>); Ex. 16 (<https://www.tclusa.com/blog/essential-cord-cutting-apps>); Ex. 10 (<https://www.tclusa.com/products/home-theater/c-series/tcl-55-class-c-series-4k-uhd-hdr-roku->

[smart-tv-55c807](#)). Use of the '413 Accused Products, in accordance with such instructions, directly infringes the '413 Patent. *See* Count I above. Upon information and belief, third parties, including end users, are engaging in such use and are therefore directly infringing the '413 Patent, having been induced to do so by Defendants.

83. Defendants have had knowledge of the '413 Patent and the '413 Accused Products' infringement of the '413 Patent or have been willfully blind to such infringement since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '413 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

84. Despite this knowledge of the '413 Patent and the '413 Accused Products' infringement of the '413 Patent, Defendants have continued to act with specific intent to induce the infringement of the '413 Patent.

85. Accordingly, Defendants have induced and is continuing to induce infringement of the '413 Patent.

86. As a result of Defendants' induced infringement of the '413 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' induced infringement, including without limitation, not less than a reasonable royalty, together with interest and costs as determined by the Court.

87. Defendants' induced infringement of the '413 Patent has caused and is causing damage and irreparable injury to Canon and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

**COUNT III**

**(Contributory Infringement of the '413 Patent pursuant to 35 U.S.C. §271(c))**

88. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

89. Defendants have contributed to and are continuing to contribute to the infringement of Claims 1-5, 7-11 of the '413 Patent by providing the components of the '413 Accused Products to others, including subsidiaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, who makes, sells, offers for sale, or uses the '413 Accused Products in the United States and/or imports the '413 Accused Products into the United States.

90. For example, each of the '413 Accused Products meets all limitations of the apparatus claims of the '413 Patent. *See* Count I above. Thus, others, including agent-subsidaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, directly infringe the apparatus claims of the '413 Patent by making, selling, offering for sale, and/or using the '413 Accused Products in the United States, and also importing the '413 Accused Products into the United States.

91. Use of the '413 Accused Products, moreover, infringes the method claims of the '413 Patent because such use leads to the performing of each and every step of the claimed methods. *See* Count I above. Thus, others, including agent-subsidaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users such as TTE and Roku each directly infringes the method claims of the '413 Patent when using the '413 Accused Products in the United States.

92. The components of the '413 Accused Products that Defendants provide to third parties, including TTE and Roku, include, at least, the smart TV hardware for the '413 Accused Products. *See* Ex. 21 (Roku 2018 Form 10-K) at 7 (“Roku TVs integrate our Roku Operating System, or Roku OS, and leverage our smart TV hardware reference design. We work with our TV brand licensees to assist in all phases of the development of Roku TVs, including development, planning, manufacturing and marketing.”). On information and belief, these components are material to the infringing instrumentalities of the '413 Accused Products and are, consequently, material parts of the invention covered by the '413 Patent. *See* Count I above. Furthermore, on information and belief, these components were especially made or adapted for use in the '413 Patent and are not a staple article or commodity of commerce suitable for substantial non-infringing use.

93. Defendants had knowledge of the '413 Patent and the '413 Accused Products' infringement of the '413 Patent or have been willfully blind to such infringement since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '413 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

94. Accordingly, Defendants have contributed and are contributing to infringement of the '413 Patent.

95. As a result of Defendants' contributory infringement of the '413 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' contributory infringement, including without limitation not less than a reasonable royalty, together with interest and costs as determined by the Court.

96. Defendants' contributory infringement of the '413 Patent has caused and is causing damage and irreparable injury to Canon, and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

**COUNT IV**  
**(Direct Infringement of the '767 Patent pursuant to 35 U.S.C. §271(a))**

96. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

97. Defendants, directly or through intermediaries, including its subsidiaries, have directly infringed and continue to directly infringe Claims 1-14 of the '767 Patent literally and/or under the doctrine of equivalents, by making, using, selling, or offering to sell within the United States, and/or importing into the United States, among others, 3-series TV systems (e.g., Models 32S325, 40S325, 43S325, 49S325, 28S305, 32S301, 32S305, 32S327, 40S303, 40S305, 43S303, 43S305, 49S303, and 49S305), 4-series TV systems (e.g., Models 43S421, 50S421, 55S421, 65S421, 43S423, 75S423, 75S425, 43S403, 43S405, 43S425, 49S403, 49S405, 49S425, 50S423, 50S425, 55S423, 55S425, 55S401, 55S403, 55S405, 65S401, 65S403, 65S405, 65S423 and 65S425), 5-series TV Systems (e.g., Models 43S515, 43S517, 49S515, 49S517, 55S515, 55S517, 65S515 and 65S517), 6-series TV Systems (e.g., Models 75R517, 55R613, 55R615, 55R617, 65R615, 65R617, 75R617 and 75R615), P6-series TV Systems (e.g., Models 55P605 and 55P607), and C8-series TV Systems (e.g., Models 55C803, 55C807, 65C807, 75C803 and 75C807), S-series TV systems (e.g., 32S3700, 40FS3750, 65US5800, 55US5800, 32S3700, 40F3750, 32S3750, 28S3750, 32S3850A, 32S3850B, 32S3850P, 32S3850, 55FS3750, 48FS3750, 55FS3850, 50FS3850, 32S3800, 50FS3800, 40FS3800, 40FS3850, 40FS4610R, 48FS3700, 48FS4610R, 55FS3700, 55FS4610R), P-series TV systems (e.g., 55UP130,

43UP130, 50UP130, 55UP120, 50UP120, 43UP120, 49FP110, 43FP110) that integrate the Roku operation system (“Roku OS”) (collectively, “’767 Accused Products”).

98. Defendants’ acts of making, using, importing, selling, and/or offering for sale the ’767 Accused Products have been without the permission, consent, authorization or license of Canon.

99. In particular, the ’767 Accused Products practice the patented invention of the ’767 Patent, and the ’767 Accused Products meet each and every limitation of the apparatus claims of the ’767 Patent, including the capability to display an image from an external device for some period of time after being disconnected depending on the external device’s type / class and/or how such device is disconnected. Accordingly, Defendants’ making, using, importing, selling, and/or offering for sale the ’767 Accused Products infringe the apparatus claims of the ’767 Patent.

100. Furthermore, the ’767 Accused Products practice the patented invention of the ’767 Patent, and Defendants’ use of the ’767 Accused Products infringes the method claims of the ’767 Patent because such use leads to the performing of each and every steps of the claimed methods, including displaying an image from an external device for some period of time after being disconnected depending on the external device’s type / class and/or how such device is disconnected.

101. To the extent the ’767 Accused Products contain modules, components or software owned by third parties, including Roku and various third party CDN service providers, Defendants still infringe the ’767 Patent because (a) Defendants are the final assembler of all modules, components and/or software in the accused system and thereby make the ’767 Accused

Products, (b) Defendants use, sell and import the '767 Accused Products into the United States by directing, controlling and authorizing third parties, – including TTE and Roku – to use the accused features of the '767 Accused Products for the purpose of testing and marketing within the United States and/or to import into the United States and sell the '767 Accused Products in the United States as Defendants' agents, and (c) Defendants are vicariously liable for other third parties' use, including end users' use, of the accused system by controlling the entire system and deriving a benefit from the use of every element of the entire system.

102. Similarly, to the extent the third parties perform a step or steps of the patented method and/or the '767 Accused Products incorporate third parties' modules, components or software that perform one or more patented steps, Defendants still infringe the '767 Patent because (a) Defendants are vicariously liable for third parties' use, including TTE's use, of the '767 Accused Products thereby performing the patented method steps and/or (b) Defendants condition receipt by the third parties of a benefit upon performance of a step or steps of the patented method and establish the manner or timing of that performance.

103. For example, according to TCL Electronics Holding Ltd.'s Annual Report (2018), "Management monitors the results of the Group's operating segments separately for the purpose of making decisions about resources allocation and performance assessment" where the Group's operating segments include various third party subsidiaries of TCL Electronics Holding Ltd. ., including TTE. *See* Ex. 19 at 17. Upon information and belief, Defendants maintain a "vertically integrated supply chain" and direct and authorize third parties, including TTE, to use, sell and/or import to the United States products, including the '767 Accused Products, only through the "vertically integrated supply chain." *See* Ex. 20 (<https://www.tclusa.com/about->



[us/press-release/tcl-north-american-growth](https://www.tcl.com/us/press-release/tcl-north-american-growth)) (“With extensive manufacturing expertise, a vertically integrated supply chain, and state-of-the-art panel factory, TCL offers innovative televisions, including the award-winning TCL® Roku TV™.”).

104. As a way of illustration, each of the ’767 Accused Products has a screen for a display unit and a central processing unit (CPU) for a control unit, and, as shown below, multiple inputs, such as USB and HDMI ports, for connecting and communicating with various external devices.<sup>2</sup>



105. There are a number of different external devices that may be connected to the ’767 Accused Products both wirelessly and via cables, including Blu-ray players, laptop computers, cameras, gaming systems, smartphones, DVRs, Cloud DVRs and CDNs. For example, Cloud DVRs and CDNs can be connected to the ’767 Accused Products wirelessly via Internet:

<sup>2</sup> Ex. 13 (TCL C-Series Quick Start Guide) at p. 8

## Preparing for Internet connectivity

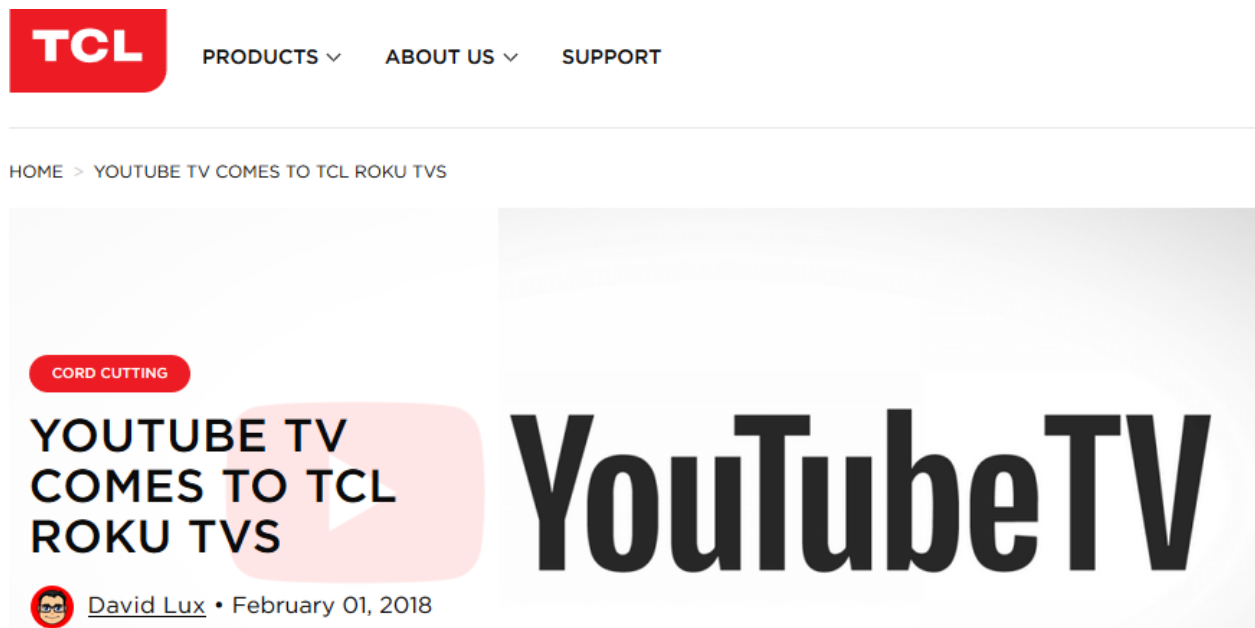
If you want to watch streaming content and take advantage of the cool features of your TCL • Roku TV, connect it to the Internet through a wireless modem/router or a wireless access point (not provided). The TV has a built-in wireless LAN adapter.

Ex. 12 ([https://www.tclusa.com/sites/default/files/2017-12/8.0\\_User\\_Manual\\_C\\_Series\\_Final\\_1.pdf](https://www.tclusa.com/sites/default/files/2017-12/8.0_User_Manual_C_Series_Final_1.pdf))

## Add streaming channels

You can add streaming channels by searching in the Roku Channel Store. New streaming channels are added to the bottom of the Home screen. If you want to move the channel tile to a different position in the grid, see [Rearrange tiles](#).

Ex. 17 ([https://www.tclusa.com/sites/default/files/2017-12/8.0\\_User\\_Manual\\_S\\_Series\\_Final\\_4.pdf](https://www.tclusa.com/sites/default/files/2017-12/8.0_User_Manual_S_Series_Final_4.pdf))




With YouTube TV, you can enjoy live, cable-free TV without a set top box. From live sports to breaking news, watch all your favorite content from dozens of your favorite networks. Plus, it comes with unlimited cloud DVR storage—record live TV and never run out of storage!

Ex. 14 (<https://www.tclusa.com/blog/youtube-tv-streaming-channel>).

106. As a further example, a smartphone can be wirelessly connected to the '767 Accused Products and display certain streaming contents provided by CDNs such as YouTube and Netflix onto the Accused Products' display unit through screen casting technology:

## How do I cast apps like YouTube or Netflix from my phone to my TV?

### Background

You can of course launch channels directly from your Roku streaming player or Roku TV™, but on some occasions, you may want to direct, or **cast**, to your TV what you are already watching on your mobile device. You can do this wirelessly with supported apps like YouTube and Netflix by opening the casting icon  on your phone or tablet and selecting your Roku device. The channel will launch automatically on your Roku device and playback will begin.

Ex. 18 (<https://support.roku.com/article/360002990094-how-do-i-cast-apps-like-youtube-or-netflix-from-my-phone-to-my-tv->).

107. The '767 Accused Products display images from these external devices, which send the images through the ports or wireless connection. The '767 Accused Products' CPUs cause the images received from the external devices to be displayed on the screen. Upon information and belief, the '767 Accused Products' CPUs acquire class information indicating a class of the external device from the external device and control the display unit to continue or end the display based on the data received from the external device at the time of disconnection of the communication connection with the external device if the class of the external device indicated by the class information is a predetermined class.

108. For example, when certain external devices are disconnected, the '767 Accused Products continue to display the image being displayed at the time of the disconnection. For other external devices, the '767 Accused Products immediately discontinue displaying the image upon disconnection. For example, when a laptop connected to the '767 Accused Products' USB or HDMI port is disconnected, the display of the image from the laptop will cease. Contrastingly, images displayed by streaming content via CDNs or Cloud DVRs on the '767 Accused Products obtained over the wireless connection continue to display for a period of time after disconnecting the wireless network. Upon and information and belief each '767 Accused Product contains a CPU and software that perform these functions.

109. Accordingly, Defendants have infringed and are continuing to infringe the '767 Patent.

110. As a result of Defendants' direct infringement of the '767 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' direct infringement, including without limitation not less than a reasonable royalty, together with interest and costs as determined by the Court.

111. Defendants' direct infringement of the '767 Patent has caused and is causing damage and irreparable injury to Canon, and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

112. Defendants, moreover, are committing willful infringement of the '767 Patent because Defendants (1) continue to commit direct infringement of the '767 Patent, and (2) have had knowledge of the '767 Patent since (A) at least December 27, 2018 when Canon filed a

complaint for infringement of the '767 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

**COUNT V**  
**(Induced Infringement of the '767 Patent pursuant to 35 U.S.C. §271(b))**

112. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

113. Defendants have induced and are continuing to induce infringement of Claims 1-14 of the '767 Patent by taking active steps to encourage and facilitate direct infringement by others, including agent-subsidiaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, in this District and elsewhere in the United States, through the dissemination of the '767 Accused Products and the creation and dissemination of promotional and marketing materials, supporting materials, instructions, product manuals, and/or technical information relating to such products with knowledge and the specific intent that their efforts will result in the direct infringement of the '767 Patent.

114. On information and belief, at the behest of Defendants and as a direct result of their instigation, control, and direction, acting as their agents TTE and/or Roku thus offered for sale and sold in the United States, and imported into the United States, without authorization, the '767 Accused Products.

115. For example, according to TCL Electronics Holding Ltd.'s Annual Report (2018), "Management monitors the results of the Group's operating segments separately for the purpose of making decisions about resources allocation and performance assessment" where the Group's operating segments include various third party subsidiaries of TCL Electronics Holding Ltd. such as TTE. *See* Ex. 19 at 17. Upon information and belief, Defendants maintain a "vertically

integrated supply chain” and including TTE, to use, sell and/or import to the United States products, including the ’767 Accused Products, only through the “vertically integrated supply chain.” *See* Ex. 20 (<https://www.tclusa.com/about-us/press-release/tcl-north-american-growth>) (“With extensive manufacturing expertise, a vertically integrated supply chain, and state-of-the-art panel factory, TCL offers innovative televisions, including the award-winning TCL® Roku TV™.”).

116. Defendants have also induced and are continuing to induce infringement of Claims 1-14 of the ’767 Patent by encouraging, instructing, and/or directing third parties, including end users, to use the ’767 Accused Products in a way that directly infringes the ’767 Patent, either literally or under the doctrine of equivalents.

117. Each of the ’767 Accused Products meets all limitations of the apparatus claims of the ’767 Patent. *See* Count III above. Thus, third parties, including end users, who use the ’767 Accused Products in the United States, also directly infringe the apparatus claims of the ’767 Patent.

118. For example, Defendants, directly or through intermediaries, including its subsidiaries, make available to end users instructions on how to use the ’767 Accused Products. *See, e.g.*, Ex. 12 (TCL C-Series User Guide 8.0); Ex. 13 (TCL C-Series Quick Start Guide); Ex. 14 (<https://www.tclusa.com/blog/youtube-tv-streaming-channel>); Ex. 15 (<https://www.tclusa.com/blog/how-to-watch-local-channels-without-cable>); Ex. 16 (<https://www.tclusa.com/blog/essential-cord-cutting-apps>); Ex. 10 (<https://www.tclusa.com/products/home-theater/c-series/tcl-55-class-c-series-4k-uhd-hdr-roku-smart-tv-55c807>). Use of the ’767 Accused Products, in accordance with such instructions,

directly infringes the '767 Patent. *See* Count IV above. Upon information and belief, third parties, including end users, are engaging in such use and are therefore directly infringing the '767 Patent, having been induced to do so by Defendants.

119. Defendants have had knowledge of the '767 Patent and the '767 Accused Products' infringement of the '767 Patent or have been willfully blind to such infringement since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '767 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

120. Despite this knowledge of the '767 Patent and the '767 Accused Products' infringement of the '767 Patent, Defendants have continued to act with specific intent to induce the infringement of the '767 Patent.

121. Accordingly, Defendants have induced and are continuing to induce infringement of the '767 Patent.

122. As a result of Defendants' induced infringement of the '767 Patent, Canon has suffered monetary damages and is entitled to recover from Defendant all damages Canon has sustained as a result of Defendants' induced infringement, including without limitation, not less than a reasonable royalty, together with interest and costs as determined by the Court.

123. Defendants' induced infringement of the '767 Patent has caused and is causing damage and irreparable injury to Canon and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

**COUNT VI**  
**(Contributory Infringement of the '767 Patent pursuant to 35 U.S.C. §271(c))**

123. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

124. Defendants have contributed to and are continuing to contribute to the infringement of Claims 1-14 of the '767 Patent by providing the components of the '767 Accused Products to others, including agent-subsidiaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, who makes, sells, offers for sale, and/or uses the '767 Accused Products in the United States and also imports the '767 Accused Products into the United States.

125. For example, each of the '767 Accused Products meets all limitations of the apparatus claims of the '767 Patent. *See* Count IV above. Thus, others, including agent-subsidiaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including as TTE and Roku, directly infringe the apparatus claims of the '767 Patent by making, selling, offering for sale, and/or using the '767 Accused Products in the United States, and also importing the '767 Accused Products into the United States.

126. Use of the '767 Accused Products, moreover, infringes the method claims of the '767 Patent because such use leads to the performing of each and every step of the claimed methods. *See* Count IV above. Thus, others, including agent-subsidiaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, each directly infringes the method claims of the '767 Patent when using the '767 Accused Products in the United States.



127. The components of the '767 Accused Products that Defendant provides to others, including subsidiaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, include, at least, smart TV hardware of the '767 Accused Products. *See* Ex. 21 (Roku 2018 Form 10-K) at 7 (“Roku TVs integrate our Roku Operating System, or Roku OS, and leverage our smart TV hardware reference design. We work with our TV brand licensees to assist in all phases of the development of Roku TVs, including development, planning, manufacturing and marketing.”). On information and belief, these components are material to the infringing instrumentalities of the '767 Accused Products and are, consequently, material parts of the invention covered by the '767 Patent. *See* Count IV above. Furthermore, on information and belief, these components are especially made or adapted for use in the '767 Patent and are not a staple article or commodity of commerce suitable for substantial non-infringing use.

128. Defendants had knowledge of the '767 Patent and the '767 Accused Products' infringement of the '767 Patent or have been willfully blind to such since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '767 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

129. Accordingly, Defendants have contributed and are contributing to infringement of the '767 Patent.

130. As a result of Defendants' contributory infringement of the '767 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon

has sustained as a result of Defendants' inducing infringement, including without limitation not less than a reasonable royalty, together with interest and costs as determined by the Court.

131. Defendants' contributory infringement of the '767 Patent have caused and are causing damage and irreparable injury to Canon and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

**COUNT VII**  
**(Direct Infringement of the '986 Patent pursuant to 35 U.S.C. §271(a))**

132. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

133. Defendants, directly or through intermediaries, including its subsidiaries, have directly infringed and continue to directly infringe Claims 1-11 of the '986 Patent literally and/or under the doctrine of equivalents, by making, using, selling, offering to sell within the United States, and/or importing into the United States, among others, 3-series TV systems (e.g., Models 32S325, 40S325, 43S325, 49S325, 28S305, 32S301, 32S305, 32S327, 40S303, 40S305, 43S303, 43S305, 49S303, and 49S305), 4-series TV systems (e.g., Models 43S421, 50S421, 55S421, 65S421, 43S423, 75S423, 75S425, 43S403, 43S405, 43S425, 49S403, 49S405, 49S425, 50S423, 50S425, 55S423, 55S425, 55S401, 55S403, 55S405, 65S401, 65S403, 65S405, 65S423 and 65S425), 5-series TV Systems (e.g., Models 43S515, 43S517, 49S515, 49S517, 55S515, 55S517, 65S515 and 65S517), 6-series TV Systems (e.g., Models 75R517, 55R613, 55R615, 55R617, 65R615, 65R617, 75R617 and 75R615), P6-series TV Systems (e.g., Models 55P605 and 55P607), and C8-series TV Systems (e.g., Models 55C803, 55C807, 65C807, 75C803 and 75C807), S-series TV systems (e.g., 32S3700, 40FS3750, 65US5800, 55US5800, 32S3700, 40F3750, 32S3750, 28S3750, 32S3850A, 32S3850B, 32S3850P, 32S3850, 55FS3750,

48FS3750, 55FS3850, 50FS3850, 32S3800, 50FS3800, 40FS3800, 40FS3850, 40FS4610R, 48FS3700, 48FS4610R, 55FS3700, 55FS4610R), P-series TV systems (e.g., 55UP130, 43UP130, 50UP130, 55UP120, 50UP120, 43UP120, 49FP110, 43FP110) that integrate the Roku OS (collectively, “’986 Accused Products”).

134. Defendants’ acts of making, using, importing, selling, and offering for sale the ’986 Accused Products have been without the permission, consent, authorization or license of Canon.

135. In particular, the ’986 Accused Products practice the patented invention of the ’986 Patent, and the ’986 Accused Products meet each and every limitation of the apparatus claims of the ’986 Patent, including the capability to display an image from an external device for some period of time after being disconnected depending on the external device’s type / class and/or how such device is disconnected. Accordingly, Defendants’ making, using, importing, selling, and/or offering for sale the ’986 Accused Products infringe the apparatus claims of the ’986 Patent.

136. Furthermore, the ’986 Accused Products practice the patented invention of the ’986 Patent, and Defendants’ use of the ’986 Accused Products infringes the method claims of the ’986 Patent because such use leads to the performing of each and every step of the claimed methods, including the displaying of an image from an external device for some period of time after being disconnected depending on the external device’s type / class and/or how such device is disconnected.

137. To the extent the ’986 Accused Products contain modules, components or software owned by third parties, including Roku Inc. and various third party CDN service

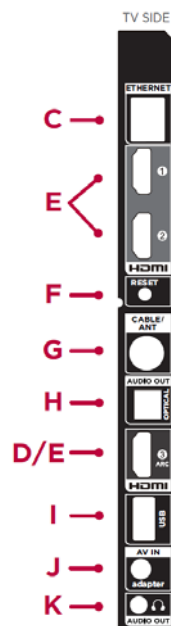
providers, Defendants still infringe the '986 Patent because (a) Defendants are the final assembler of all modules, components and/or software in the accused system and thereby make the '986 Accused Products, (b) Defendants use, sell and import the '986 Accused Products into the United States by directing, controlling and authorizing third parties directing and authorizing third parties – including TTE and Roku – to use the accused features of the '986 Accused Products for the purpose of testing and marketing within the United States and/or to import into the United States and sell the '986 Accused Products in the United States as Defendants' agents, and (c) Defendants are vicariously liable for other third parties' use, including end users' use, of the accused system by controlling the entire system and deriving a benefit from the use of every element of the entire system.

138. Similarly, to the extent the third parties perform a step or steps of the patented method and/or the '986 Accused Products incorporate third parties' modules, components or software that perform one or more patented steps, Defendants still infringe the '986 Patent because (a) Defendants are vicariously liable for third parties' use, including TTE's use, of the '986 Accused Products thereby performing the patented method steps and/or (b) Defendants condition receipt by the third parties of a benefit upon performance of a step or steps of the patented method and establish the manner or timing of that performance.

139. For example, according to TCL Electronics Holding Ltd.'s Annual Report (2018), "Management monitors the results of the Group's operating segments separately for the purpose of making decisions about resources allocation and performance assessment" where the Group's operating segments include various third party subsidiaries of TCL Electronics Holding Ltd., including TTE. *See* Ex. 19 at 17. Upon information and belief, Defendants maintain a

“vertically integrated supply chain” and direct and authorize third parties, including TTE, to use, sell and/or import to the United States products, including the ’986 Accused Products, only through the “vertically integrated supply chain.” See Ex. 20 (<https://www.tclusa.com/about-us/press-release/tcl-north-american-growth>) (“With extensive manufacturing expertise, a vertically integrated supply chain, and state-of-the-art panel factory, TCL offers innovative televisions, including the award-winning TCL® Roku TV™.”).

140. As a way of illustration, each of the ’986 Accused Products has a screen as its display unit, and, as shown below, a communication unit configured to connect to and communicate with a wide variety of external devices.<sup>3</sup>



141. There are a number of different external devices that may be connected to the ’986 Accused Products both wirelessly and via cables, including Blu-ray players, laptop computers, cameras, gaming systems, smartphones, DVRs, Cloud DVRs and CDNs. For

<sup>3</sup> Ex. 13 (TCL C-Series Quick Start Guide) at p. 8

example, Cloud DVRs and CDNs can be connected to the '986 Accused Products wirelessly via Internet:

## Preparing for Internet connectivity

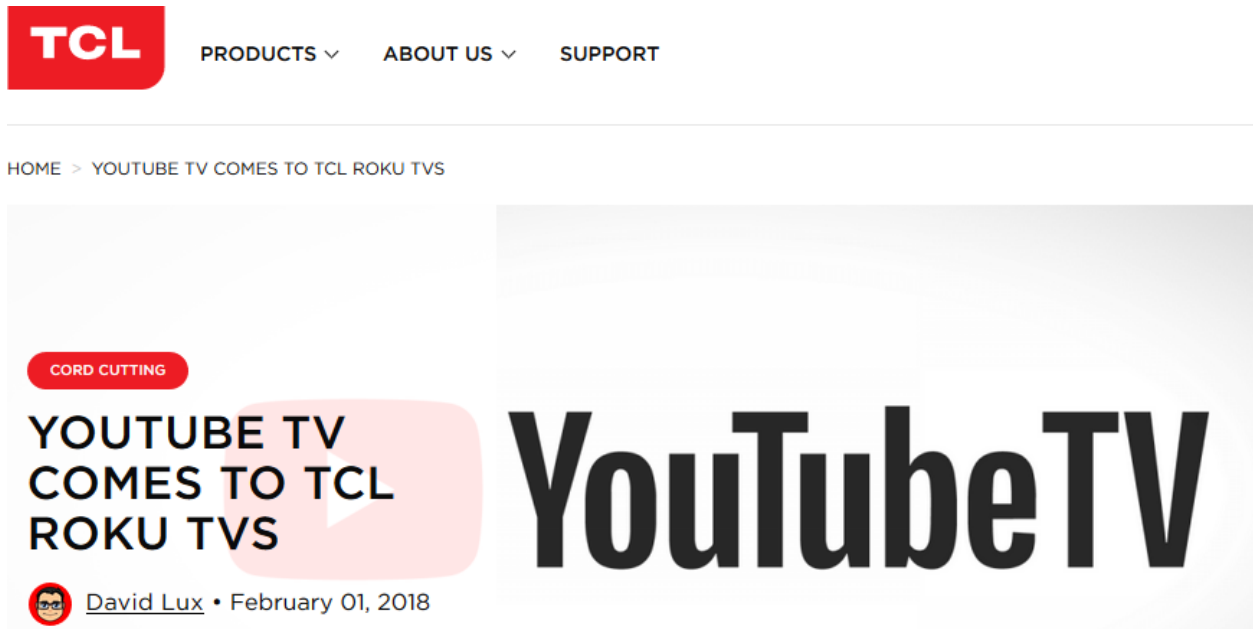
If you want to watch streaming content and take advantage of the cool features of your TCL • Roku TV, connect it to the Internet through a wireless modem/router or a wireless access point (not provided). The TV has a built-in wireless LAN adapter.

Ex. 12 ([https://www.tclusa.com/sites/default/files/2017-12/8.0\\_User\\_Manual\\_C\\_Series\\_Final\\_1.pdf](https://www.tclusa.com/sites/default/files/2017-12/8.0_User_Manual_C_Series_Final_1.pdf))

## Add streaming channels

You can add streaming channels by searching in the Roku Channel Store. New streaming channels are added to the bottom of the Home screen. If you want to move the channel tile to a different position in the grid, see [Rearrange tiles](#).

Ex. 17 ([https://www.tclusa.com/sites/default/files/2017-12/8.0\\_User\\_Manual\\_S\\_Series\\_Final\\_4.pdf](https://www.tclusa.com/sites/default/files/2017-12/8.0_User_Manual_S_Series_Final_4.pdf))




Ex. 14 (<https://www.tclusa.com/blog/youtube-tv-streaming-channel>).

142. As a further example, a smartphone can be wirelessly connected to the '986 Accused Products and display certain streaming contents provided by CDNs such as YouTube and Netflix through screen casting technology:

How do I cast apps like YouTube or Netflix from my phone to my TV?

### Background

You can of course launch channels directly from your Roku streaming player or Roku TV™, but on some occasions, you may want to direct, or **cast**, to your TV what you are already watching on your mobile device. You can do this wirelessly with supported apps like YouTube and Netflix by opening the casting icon  on your phone or tablet and selecting your Roku device. The channel will launch automatically on your Roku device and playback will begin.

Ex. 18 (<https://support.roku.com/article/360002990094-how-do-i-cast-apps-like-youtube-or-netflix-from-my-phone-to-my-tv->).

143. The '986 Accused Products display images from these external devices, which send the images through the ports or wireless connection. The '986 Accused Products' CPUs cause the images received from the external devices to be displayed on the screen.

144. Upon information and belief, the '986 Accused Products have a storing unit configured to store information for controlling whether or not to continue the display of the image being displayed by the display unit when the communication is disconnected, a determination unit configured to determine whether or not to continue the display of the image received from the external device by comparing the type of the external device involving the communication such as the type, or class, of external devices from which information was sent as well as a control unit that controls whether or not to continue the display of the image being displayed by the display unit when the communication is disconnected in accordance with the determination result by the determination unit.

145. For example, when certain external devices are disconnected physically, the '986 Accused Products continue to display the image being displayed at the time of the disconnection. When CDNs or Cloud DVRs are physically disconnected by, for example, switching off the router and shutting down wifi network that connected the '986 Accused Products and the CDNs or Cloud DVRs, the '986 Accused Products continue to display the streamed contents for a period of time after disconnection.

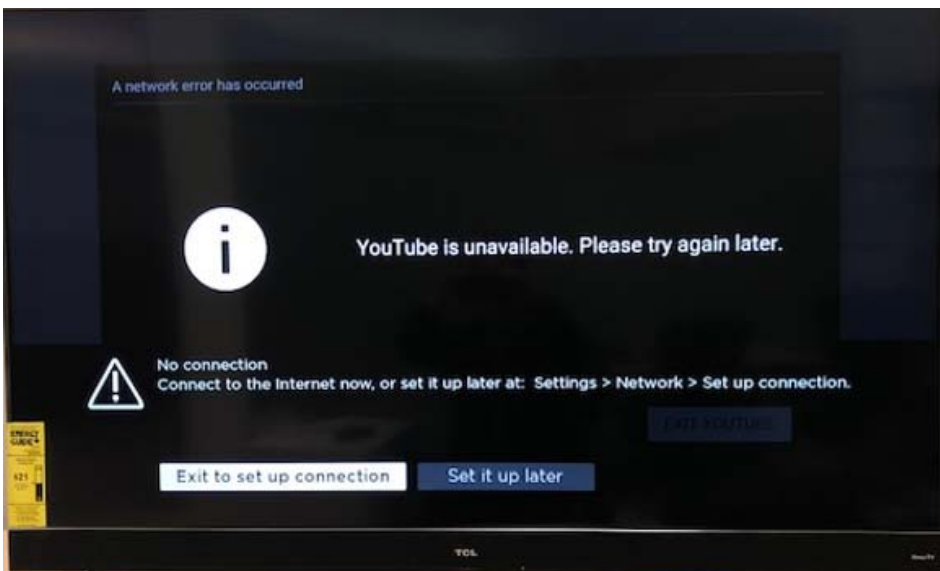
146. For another example, when the '986 Accused Product is connected via Ethernet cable and not via wifi, CDNs such as YouTube can be physically disconnected from the '986



Accused Products by unplugging the Ethernet cable that connected the '986 Accused Products to a router or modem. After unplugging the Ethernet cable, as shown below, the '986 Accused Products continue to display YouTube video contents for certain period until they proceed to show a black banner at the bottom of the screen indicating that there is no longer connection.



147. And after another period, as shown below, the Accused TVs proceed to overwrite the screen with a black page with white letters stating that “A network error has occurred.”



148. Contrastingly, when external devices are disconnected logically, the '986 Accused Products immediately discontinue displaying the image upon disconnection. When CDNs or Cloud DVRs are logically disconnected from the '986 Accused Products by operating remote controllers and sending computer instructions to the '986 Accused Products and to CDNs or Cloud DVRs requesting closing of communication sessions between the CDNs or Cloud DVRs and the '986 Accused Products, the '986 Accused Products immediately terminate the display of the streamed contents.

149. Accordingly, Defendants have infringed and are continuing to infringe the '986 Patent.

150. As a result of Defendants' direct infringement of the '986 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' direct infringement, including without limitation not less than a reasonable royalty, together with interest and costs as determined by the Court.

151. Defendants' direct infringement of the '986 Patent has caused and is causing damage and irreparable injury to Canon, and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

152. Defendants, moreover, is committing willful infringement of the '986 Patent because Defendants (1) continue to commit direct infringement of the '986 Patent, and (2) have had knowledge of the '986 Patent since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '986 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

**COUNT VIII**

**(Induced Infringement of the '986 Patent pursuant to 35 U.S.C. §271(b))**

152. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

153. Defendants have induced and are continuing to induce infringement of Claims 1-11 of the '986 Patent by taking active steps to encourage and facilitate direct infringement by others, including agent-subsidaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, in this District and elsewhere in the United States, through the dissemination of the '986 Accused Products and the creation and dissemination of promotional and marketing materials, supporting materials, instructions, product manuals, and/or technical information relating to such products with knowledge and the specific intent that their efforts will result in the direct infringement of the '986 Patent.

154. On information and belief, at the behest of Defendants and as a direct result of their instigation, control, and direction, acting as their agents TTE and/or Roku thus offered for sale and sold in the United States, and imported into the United States, without authorization, the '986 Accused Products.

155. For example, according to TCL Electronics Holding Ltd.'s Annual Report (2018), "Management monitors the results of the Group's operating segments separately for the purpose of making decisions about resources allocation and performance assessment" where the Group's operating segments include various third party subsidiaries of TCL Electronics Holding Ltd., including TTE. *See* Ex. 19 at 17. Upon information and belief, Defendants maintain a "vertically integrated supply chain" and direct and authorize third parties, including TTE, to use, sell and/or import to the United States products, including the '986 Accused Products, only

through the “vertically integrated supply chain.” *See* Ex. 20 (<https://www.tclusa.com/about-us/press-release/tcl-north-american-growth>) (“With extensive manufacturing expertise, a vertically integrated supply chain, and state-of-the-art panel factory, TCL offers innovative televisions, including the award-winning TCL® Roku TV™.”).

156. Defendants have also induced and are continuing to induce infringement Claims 1-11 of the ’986 Patent by encouraging, instructing, and/or directing third parties, including end users, to use the ’986 Accused Products in a way that directly infringes the ’986 Patent, either literally or under the doctrine of equivalents.

157. Each of the ’986 Accused Products meets all limitations of the apparatus claims of the ’986 Patent. *See* Count VII above. Thus, third parties, including end users, who use the ’986 Accused Products in the United States, also directly infringe the apparatus claims of the ’986 Patent.

158. For example, Defendants direct and control third parties such as TTE and thereby make available to end users instructions on how to use the ’986 Accused Products. *See, e.g.*, Ex. 12 (TCL C-Series User Guide 8.0); Ex. 13 (TCL C-Series Quick Start Guide); Ex. 14 (<https://www.tclusa.com/blog/youtube-tv-streaming-channel>); Ex. 15 (<https://www.tclusa.com/blog/how-to-watch-local-channels-without-cable>); Ex. 16 (<https://www.tclusa.com/blog/essential-cord-cutting-apps>); Ex. 10 (<https://www.tclusa.com/products/home-theater/c-series/tcl-55-class-c-series-4k-uhd-hdr-roku-smart-tv-55c807>). Use of the ’986 Accused Products, in accordance with such instructions, directly infringes the ’986 Patent. *See* Count VII above. Upon information and belief, third

parties, including end users, are engaging in such use and are therefore directly infringing the '986 Patent, having been induced to do so by Defendants.

159. Defendants, directly or through intermediaries, including its subsidiaries, have had knowledge of the '986 Patent and the '986 Accused Products' infringement of the '986 Patent or have been willfully blind to such infringement since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '986 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

160. Despite this knowledge of the '986 Patent and the '986 Accused Products' infringement of the '986 Patent, Defendants have continued to act with specific intent to induce the infringement of the '986 Patent.

161. Accordingly, Defendants have induced and are continuing to induce infringement of the '986 Patent.

162. As a result of Defendants' induced infringement of the '986 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' induced infringement, including without limitation, not less than a reasonable royalty, together with interest and costs as determined by the Court.

163. Defendants' induced infringement of the '986 Patent has caused and is causing damage and irreparable injury to Canon and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

**COUNT IX**  
**(Contributory Infringement of the '986 Patent pursuant to 35 U.S.C. §271(c))**

163. Canon repeats, realleges and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

164. Defendants have contributed to and are continuing to contribute to the infringement of Claims 1-11 of the '986 Patent by providing the components of the '986 Accused Products to others, including agent-subsidaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, who makes, sells, offers for sale, and/or uses the '986 Accused Products in the United States and also imports the '986 Accused Products into the United States.

165. For example, each of the '986 Accused Products meet all limitations of the apparatus claims of the '986 Patent. *See* Count VII above. Thus, others, including agent-subsidaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, directly infringe the apparatus claims of the '986 Patent by making, selling, offering for sale, and/or using the '986 Accused Products in the United States, and also importing the '986 Accused Products into the United States.

166. Use of the '986 Accused Products, moreover, infringe the method claims of the '986 Patent because such use leads to the performing of each and every step of the claimed methods. *See* Count VII above. Thus, others, including agent-subsidaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, each directly infringes the method claims of the '986 Patent when using the '986 Accused Products in the United States.

167. The components of the '986 Accused Products that Defendants provide to others, including subsidiaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, include, at least, the smart TV hardware of the '986 Accused Products. *See* Ex. 21 (Roku 2018 Form 10-K) at 7 (“Roku TVs integrate our Roku Operating System, or Roku OS, and leverage our smart TV hardware reference design. We work with our TV brand licensees to assist in all phases of the development of Roku TVs, including development, planning, manufacturing and marketing.”). On information and belief, these components are material to the infringing instrumentalities of the '986 Accused Products and are, consequently, material parts of the invention covered by the '986 Patent. *See* Count VII above. Furthermore, on information and belief, these components are especially made or adapted for use in the '986 Patent and are not a staple article or commodity of commerce suitable for substantial non-infringing use.

168. Defendants had knowledge of the '986 Patent and the '986 Accused Products' infringement of the '986 Patent or have been willfully blind to such infringement since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '986 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

169. Accordingly, Defendants have contributed and are contributing to infringement of the '986 Patent.

170. As a result of Defendants' contributory infringement of the '986 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon

has sustained as a result of Defendants' inducing infringement, including without limitation not less than a reasonable royalty, together with interest and costs as determined by the Court.

171. Defendants' contributory infringement of the '986 Patent has caused and is causing damage and irreparable injury to Canon, and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

**COUNT X**  
**(Direct Infringement of the '206 Patent pursuant to 35 U.S.C. §271(a))**

172. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

173. Defendants, directly or through intermediaries, including its subsidiaries, have directly infringed and continue to directly infringe Claims 1-14 of the '206 Patent literally and/or under the doctrine of equivalents, by making, using, selling, or offering to sell within the United States, and/or importing into the United States, among others, 3-series TV systems (e.g., Models 32S325, 40S325, 43S325, 49S325, 28S305, 32S301, 32S305, 32S327, 40S303, 40S305, 43S303, 43S305, 49S303, and 49S305), 4-series TV systems (e.g., Models 43S421, 50S421, 55S421, 65S421, 43S423, 75S423, 75S425, 43S403, 43S405, 43S425, 49S403, 49S405, 49S425, 50S423, 50S425, 55S423, 55S425, 55S401, 55S403, 55S405, 65S401, 65S403, 65S405, 65S423 and 65S425), 5-series TV Systems (e.g., Models 43S515, 43S517, 49S515, 49S517, 55S515, 55S517, 65S515 and 65S517), 6-series TV Systems (e.g., Models 75R517, 55R613, 55R615, 55R617, 65R615, 65R617, 75R617 and 75R615), P6-series TV Systems (e.g., Models 55P605 and 55P607), and C8-series TV Systems (e.g., Models 55C803, 55C807, 65C807, 75C803 and 75C807), S-series TV systems (e.g., 32S3700, 40FS3750, 65US5800, 55US5800, 32S3700, 40F3750, 32S3750, 28S3750, 32S3850A, 32S3850B, 32S3850P, 32S3850, 55FS3750,



48FS3750, 55FS3850, 50FS3850, 32S3800, 50FS3800, 40FS3800, 40FS3850, 40FS4610R, 48FS3700, 48FS4610R, 55FS3700, 55FS4610R), P-series TV systems (e.g., 55UP130, 43UP130, 50UP130, 55UP120, 50UP120, 43UP120, 49FP110, 43FP110) that integrate the OS (collectively, “’206 Accused Products”).

174. Defendants’ acts of making, using, importing, selling, and/or offering for sale the ’206 Accused Products have been without the permission, consent, authorization or license of Canon.

175. In particular, the ’206 Accused Products practice the patented invention of the ’206 Patent, and the ’206 Accused Products meet each and every limitation of the apparatus claims of the ’206 Patent, including the capability to display an image from an external device for some period of time after being disconnected (and varying the timing to discontinue such displaying) depending on the external device’s type and/or how such device is disconnected. Accordingly, Defendants’ making, using, importing, selling, and/or offering for sale the ’206 Accused Products infringe the apparatus claims of the ’206 Patent.

176. Furthermore, the ’206 Accused Products practice the patented invention of the ’206 Patent, and Defendants’ use of the ’206 Accused Products infringes the method claims of the ’206 Patent because such use leads to the performing of each and every step of the claimed methods, including the displaying of an image from an external device for some period of time after being disconnected (and varying the timing to discontinue such displaying) depending on the external device’s type and/or how such device is disconnected.

177. To the extent the ’206 Accused Products contain modules, components or software owned by third parties, including Roku Inc. and various third party CDN service

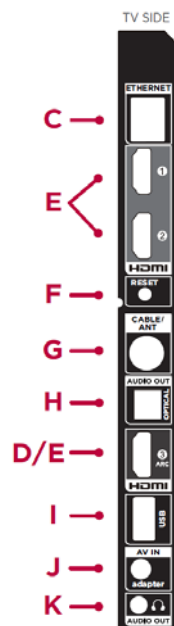
providers, Defendants still infringe the '206 Patent because (a) Defendants are the final assembler of all modules, components and/or software in the accused system and thereby make the '206 Accused Products, (b) Defendants use, sell and import the '206 Accused Products into the United States by directing, controlling and authorizing third parties – including TTE and Roku – to use the accused features of the '206 Accused Products for the purpose of testing and marketing within the United States and/or to import into the United States and sell the '206 Accused Products in the United States as Defendants' agents, and (c) Defendants are vicariously liable for other third parties' use, including end users' use, of the accused system by controlling the entire system and deriving a benefit from the use of every element of the entire system.

178. Similarly, to the extent the third parties perform a step or steps of the patented method and/or the '206 Accused Products incorporate third parties' modules, components or software that perform one or more patented steps, Defendants still infringe the '206 Patent because (a) Defendants are vicariously liable for third parties' use, including TTE's use, of the '206 Accused Products thereby performing the patented method steps and/or (b) Defendants condition receipt by the third parties of a benefit upon performance of a step or steps of the patented method and establish the manner or timing of that performance.

179. For example, according to TCL Electronics Holding Ltd.'s Annual Report (2018), "Management monitors the results of the Group's operating segments separately for the purpose of making decisions about resources allocation and performance assessment" where the Group's operating segments include various third party subsidiaries of TCL Electronics Holding Ltd., including TTE. *See* Ex. 19 at 17. Upon information and belief, Defendants maintain a "vertically integrated supply chain" and direct and authorize third parties, including TTE, to use,

sell and/or import to the United States products, including the '206 Accused Products, only through the “vertically integrated supply chain.” *See* Ex. 20 (<https://www.tclusa.com/about-us/press-release/tcl-north-american-growth>) (“With extensive manufacturing expertise, a vertically integrated supply chain, and state-of-the-art panel factory, TCL offers innovative televisions, including the award-winning TCL® Roku TV™.”).

180. As a way of illustration, each of the '206 Accused Products have a screen as their display unit, and, as shown below, a communication unit configured to connect to and communicate with a wide variety of external devices.<sup>4</sup>



181. There are a number of different external devices that may be connected to the '206 Accused Products both wirelessly and via cables, including Blu-ray players, laptop computers, cameras, gaming systems, smartphones, DVRs, Cloud DVRs and CDNs. For

<sup>4</sup> Ex. 13 (TCL C-Series Quick Start Guide) at p. 8

example, Cloud DVRs and CDNs can be connected to the '206 Accused Products wirelessly via Internet:

## Preparing for Internet connectivity

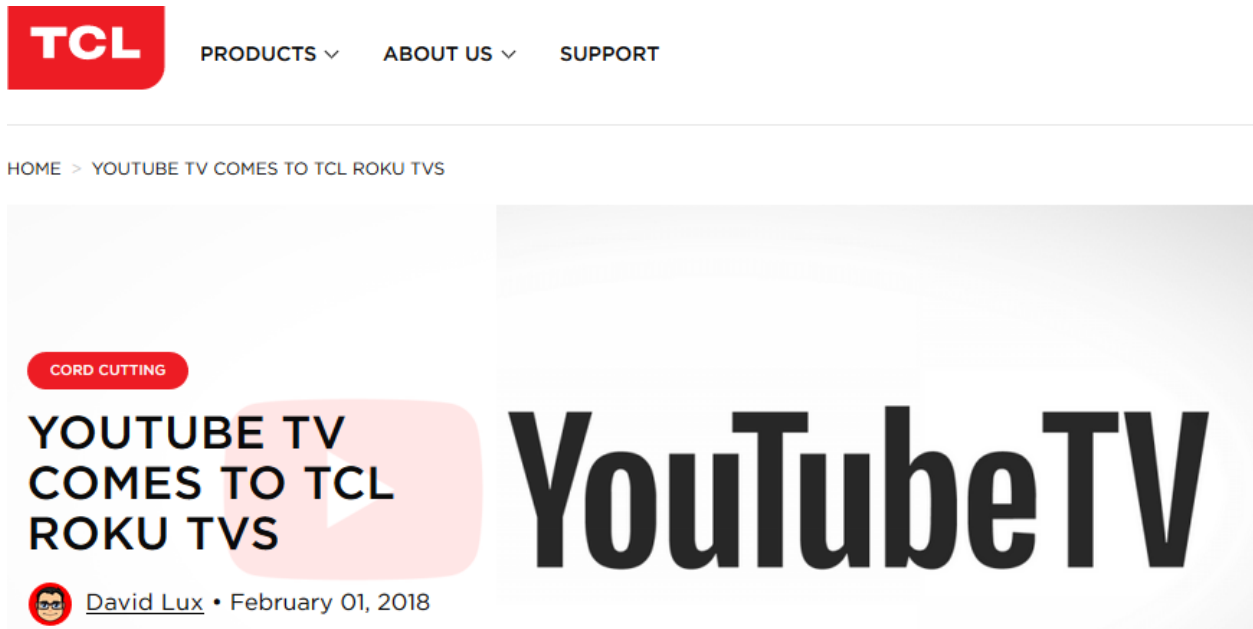
If you want to watch streaming content and take advantage of the cool features of your TCL • Roku TV, connect it to the Internet through a wireless modem/router or a wireless access point (not provided). The TV has a built-in wireless LAN adapter.

Ex. 12 ([https://www.tclusa.com/sites/default/files/2017-12/8.0\\_User\\_Manual\\_C\\_Series\\_Final\\_1.pdf](https://www.tclusa.com/sites/default/files/2017-12/8.0_User_Manual_C_Series_Final_1.pdf))

## Add streaming channels

You can add streaming channels by searching in the Roku Channel Store. New streaming channels are added to the bottom of the Home screen. If you want to move the channel tile to a different position in the grid, see [Rearrange tiles](#).

Ex. 17 ([https://www.tclusa.com/sites/default/files/2017-12/8.0\\_User\\_Manual\\_S\\_Series\\_Final\\_4.pdf](https://www.tclusa.com/sites/default/files/2017-12/8.0_User_Manual_S_Series_Final_4.pdf))




With YouTube TV, you can enjoy live, cable-free TV without a set top box. From live sports to breaking news, watch all your favorite content from dozens of your favorite networks. Plus, it comes with unlimited cloud DVR storage—record live TV and never run out of storage!

Ex. 14 (<https://www.tclusa.com/blog/youtube-tv-streaming-channel>).

182. As a further example, a smartphone can be wirelessly connected to the '206 Accused Products and display certain streaming contents provided by CDNs such as YouTube and Netflix through screen casting technology:

How do I cast apps like YouTube or Netflix from my phone to my TV?

### Background

You can of course launch channels directly from your Roku streaming player or Roku TV™, but on some occasions, you may want to direct, or **cast**, to your TV what you are already watching on your mobile device. You can do this wirelessly with supported apps like YouTube and Netflix by opening the casting icon  on your phone or tablet and selecting your Roku device. The channel will launch automatically on your Roku device and playback will begin.

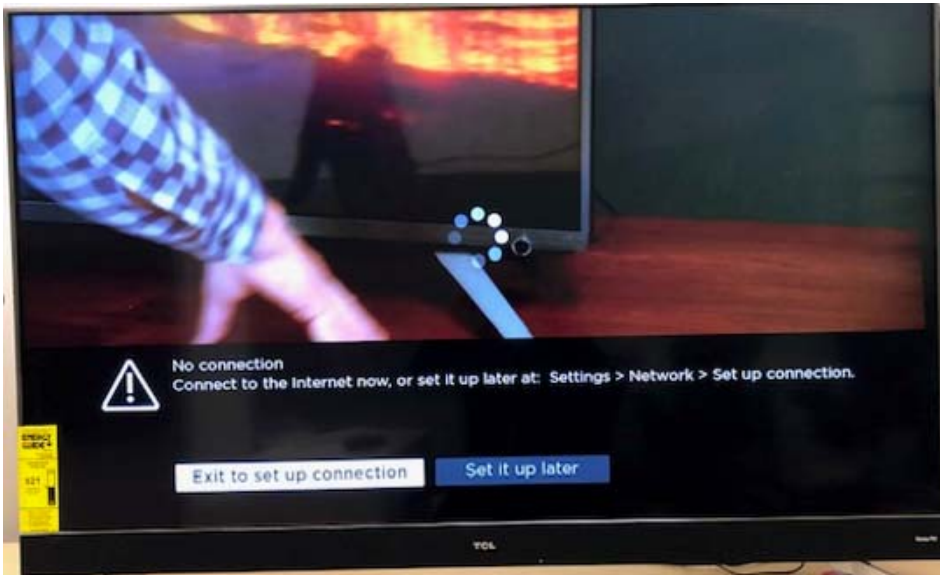
Ex. 18 (<https://support.roku.com/article/360002990094-how-do-i-cast-apps-like-youtube-or-netflix-from-my-phone-to-my-tv->).

183. The '206 Accused Products display images from these external devices, which send the images through the ports or wireless connection. The '206 Accused Products' CPUs cause the images received from the external devices to be displayed on the screen. Upon information and belief, the '206 Accused Products' CPUs display an image received from the external device via the communication unit, and if communication with the external device is disconnected, stop the display of the image received from the external device after certain various period of time from the disconnection to the stopping of the display of the image depending on a type of external devices.

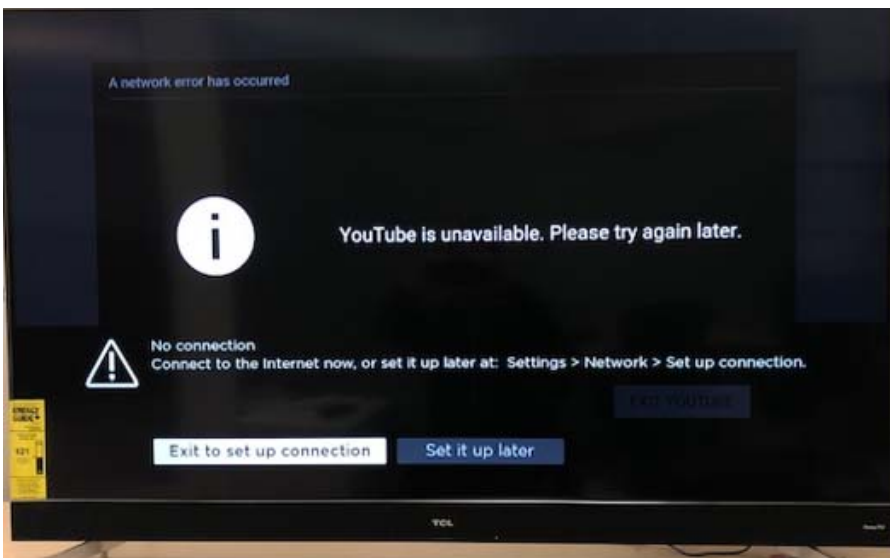
184. For example, when certain external devices are disconnected physically, the '206 Accused Products continue to display the image being displayed at the time of the disconnection for a certain period, the period varying based on the type and class of external devices. When CDNs or Cloud DVRs are physically disconnected by, for example, switching off the router and shutting down wifi network that connected the '206 Accused Products and the CDNs or Cloud DVRs, the '206 Accused Products continue to display the streamed contents for a period of time after disconnection.

185. For another example, when the '206 Accused Product is connected via Ethernet cable and not via wifi, CDNs such as YouTube can be physically disconnected from the '206 Accused Products by unplugging the Ethernet cable that connected the '206 Accused Products to a router or modem. After unplugging the Ethernet cable, as shown below, the '206 Accused

Products continue to display YouTube video contents for certain period until they proceed to show a black banner at the bottom of the screen indicating that there is no longer connection.



186. And after another period, as shown below, the Accused TVs proceed to overwrite the screen with a black page with white letters stating that “A network error has occurred.”



187. Accordingly, Defendants have infringed and are continuing to infringe the '206 Patent.

188. As a result of Defendants' direct infringement of the '206 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' direct infringement, including without limitation not less than a reasonable royalty, together with interest and costs as determined by the Court.

189. Defendants' direct infringement of the '206 Patent has caused and is causing damage and irreparable injury to Canon, and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

190. Defendants, moreover, are committing willful infringement of the '206 Patent because Defendants (1) continue to commit direct infringement of the '206 Patent, and (2) have had knowledge of the '206 Patent since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '206 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

**COUNT XI**  
**(Induced Infringement of the '206 Patent pursuant to 35 U.S.C. §271(b))**

190. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

191. Defendants have induced and are continuing to induce infringement of Claims 1-14 of the '206 Patent by taking active steps to encourage and facilitate direct infringement by others, including agent-subsidiaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, in this District and elsewhere in the United States, through the dissemination of the '206 Accused Products and the creation and dissemination of promotional and marketing materials, supporting materials, instructions, product manuals, and/or



technical information relating to such products with knowledge and the specific intent that their efforts will result in the direct infringement of the '206 Patent.

192. On information and belief, at the behest of Defendants and as a direct result of their instigation, control, and direction, acting as their agents TTE and/or Roku thus offered for sale and sold in the United States, and imported into the United States, without authorization, the '206 Accused Products.

193. For example, according to TCL Electronics Holding Ltd.'s Annual Report (2018), "Management monitors the results of the Group's operating segments separately for the purpose of making decisions about resources allocation and performance assessment" where the Group's operating segments include various third party subsidiaries of TCL Electronics Holding Ltd., including TTE. *See* Ex. 19 at 17. Upon information and belief, Defendants maintain a "vertically integrated supply chain" and direct and authorize third parties, including TTE, to use, sell and/or import to the United States products, including the '206 Accused Products, only through the "vertically integrated supply chain." *See* Ex. 20 (<https://www.tclusa.com/about-us/press-release/tcl-north-american-growth>) ("With extensive manufacturing expertise, a vertically integrated supply chain, and state-of-the-art panel factory, TCL offers innovative televisions, including the award-winning TCL® Roku TV™.").

194. Defendants have also induced and are continuing to induce infringement of Claims 1-14 of the '206 Patent by encouraging, instructing, and/or directing third parties, including end users, to use the '206 Accused Products in a way that directly infringes the '206 Patent, either literally or under the doctrine of equivalents.

195. Each of the '206 Accused Products meet all limitations of the apparatus claims of the '206 Patent. *See* Count VII above. Thus, third parties, including end users, who use the '206 Accused Products in the United States, also directly infringe the apparatus claims of the '206 Patent.

196. For example, Defendants, directly or through intermediaries, including its subsidiaries, make available to third parties instructions on how to use the '206 Accused Products. *See, e.g.*, Ex. 12 (TCL C-Series User Guide 8.0); Ex. 13 (TCL C-Series Quick Start Guide); Ex. 14 (<https://www.tclusa.com/blog/youtube-tv-streaming-channel>); Ex. 15 (<https://www.tclusa.com/blog/how-to-watch-local-channels-without-cable>); Ex. 16 (<https://www.tclusa.com/blog/essential-cord-cutting-apps>); Ex. 10 (<https://www.tclusa.com/products/home-theater/c-series/tcl-55-class-c-series-4k-uhd-hdr-roku-smart-tv-55c807>). Use of the '206 Accused Products, in accordance with such instructions, directly infringes the '206 Patent. *See* Count X above. Upon information and belief, third parties, including end users, are engaging in such use and are therefore directly infringing the '206 Patent, having been induced to do so by Defendants.

197. Defendants have had knowledge of the '206 Patent and the '206 Accused Products' infringement of the '206 Patent or have been willfully blind to such infringement since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '206 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

198. Despite this knowledge of the '206 Patent and the '206 Accused Products' infringement of the '206 Patent, Defendants have continued to act with specific intent to induce the infringement of the '206 Patent.

199. Accordingly, Defendants have induced and are continuing to induce infringement of the '206 Patent.

200. As a result of Defendants' induced infringement of the '206 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' induced infringement, including without limitation, not less than a reasonable royalty, together with interest and costs as determined by the Court.

201. Defendants' induced infringement of the '206 Patent has caused and is causing damage and irreparable injury to Canon and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

**COUNT XII**  
**(Contributory Infringement of the '206 Patent pursuant to 35 U.S.C. §271(c))**

201. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

202. Defendants have contributed to and are continuing to contribute to the infringement of Claims 1-14 of the '206 Patent by providing the components of the '206 Accused Products to others, including agent-subsidiaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, who makes, sells, offers for sale, or uses the '206 Accused Products in the United States and/or imports the '206 Accused Products into the United States.

203. For example, each of the '206 Accused Products meet all limitations of the apparatus claims of the '206 Patent. *See* Count X above. Thus, others, including agent-subsidaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, directly infringe the apparatus claims of the '206 Patent by making, selling, offering for sale, and/or using the '206 Accused Products in the United States, and also importing the '206 Accused Products into the United States.

204. Use of the '206 Accused Products, moreover, infringes the method claims of the '206 Patent because such use leads to the performing of each and every step of the claimed methods. *See* Count X above. Thus, others, including agent-subsidaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, each directly infringes the method claims of the '206 Patent when using the '206 Accused Products in the United States.

205. The components of the '206 Accused Products that Defendants provide to others, including agent-subsidaries, affiliates, partners, CDN service providers, importers, resellers, customers and/or end users, including TTE and Roku, include, at least, the smart TV hardware of the '206 Accused Products. *See* Ex. 21 (Roku 2018 Form 10-K) at 7 (“Roku TVs integrate our Roku Operating System, or Roku OS, and leverage our smart TV hardware reference design. We work with our TV brand licensees to assist in all phases of the development of Roku TVs, including development, planning, manufacturing and marketing.”). On information and belief, these components are material to the infringing instrumentalities of the '206 Accused Products and are, consequently, material parts of the invention covered by the '206 Patent. *See* Count X above. Furthermore, on information and belief, these components are especially made or

adapted for use in the '206 Patent and are not a staple article or commodity of commerce suitable for substantial non-infringing use.

206. Defendants had knowledge of the '206 Patent and the '206 Accused Products' infringement of the '206 Patent or have been willfully blind to such since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '206 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

207. Accordingly, Defendants have contributed and are contributing to infringement of the '206 Patent.

208. As a result of Defendants' contributory infringement of the '206 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' contributory infringement, including without limitation not less than a reasonable royalty, together with interest and costs as determined by the Court.

209. Defendants' contributory infringement of the '206 Patent has caused and is causing damage and irreparable injury to Canon, and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

**COUNT XIII**  
**(Direct Infringement of the '130 Patent pursuant to 35 U.S.C. §271(a))**

210. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

211. Defendants, directly or through intermediaries, including its subsidiaries, have directly infringed and continues to directly infringe Claims 1-8 of the '130 Patent literally and/or under the doctrine of equivalents, by making, using, selling, or offering to sell within the United

States, and/or importing into the United States, among others, 3-series TV systems (e.g., Models 32S325, 40S325, 43S325, 49S325, 28S305, 32S301, 32S305, 32S327, 40S303, 40S305, 43S303, 43S305, 49S303, and 49S305), 4-series TV systems (e.g., Models 43S421, 50S421, 55S421, 65S421, 43S423, 75S423, 75S425, 43S403, 43S405, 43S425, 49S403, 49S405, 49S425, 50S423, 50S425, 55S423, 55S425, 55S401, 55S403, 55S405, 65S401, 65S403, 65S405, 65S423 and 65S425), 5-series TV Systems (e.g., Models 43S515, 43S517, 49S515, 49S517, 55S515, 55S517, 65S515 and 65S517), 6-series TV Systems (e.g., Models 75R517, 55R613, 55R615, 55R617, 65R615, 65R617, 75R617 and 75R615), P6-series TV Systems (e.g., Models 55P605 and 55P607), and C8-series TV Systems (e.g., Models 55C803, 55C807, 65C807, 75C803 and 75C807), S-series TV systems (e.g., 32S3700, 40FS3750, 65US5800, 55US5800, 32S3700, 40F3750, 32S3750, 28S3750, 32S3850A, 32S3850B, 32S3850P, 32S3850, 55FS3750, 48FS3750, 55FS3850, 50FS3850, 32S3800, 50FS3800, 40FS3800, 40FS3850, 40FS4610R, 48FS3700, 48FS4610R, 55FS3700, 55FS4610R), P-series TV systems (e.g., 55UP130, 43UP130, 50UP130, 55UP120, 50UP120, 43UP120, 49FP110, 43FP110) that integrate the Roku OS (collectively, “’130 Accused Product”).

212. Defendants’ acts of making, using, importing, selling, and/or offering for sale the ’130 Accused Products have been without the permission, consent, authorization or license of Canon.

213. In particular, the ’130 Accused Products practice the patented invention of the ’130 Patent, and the ’130 Accused Products meets each and every limitation of the apparatus claims of the ’130 Patent, including the capability to buffer and record streaming contents while the contents are not being displayed on the television either while the television’s power is off or

while the user is viewing other programs. Accordingly, Defendants' making, using, importing, selling, and/or offering for sale the '130 Accused Products infringe the apparatus claims of the '130 Patent.

214. Furthermore, the '130 Accused Products practice the patented invention of the '130 Patent, and Defendants' use of the '130 Accused Products infringes the method claims of the '130 Patent because such use leads to the performing of each and every step of the claimed methods, including the buffering and recording of streaming contents while the contents are not being displayed on the television either while the television's power is off or while the user is viewing other programs.

215. To the extent the '130 Accused Products contain modules, components or software owned by third parties, including Roku Inc. and various third party Cloud DVR service providers, Defendants still infringe the '130 Patent because (a) Defendants are the final assembler of all modules, components and/or software in the accused system and thereby make the '130 Accused Products, (b) Defendants use, sell and import the '130 Accused Products into the United States by directing, controlling and authorizing third parties – including TTE and Roku – to use the accused features of the '130 Accused Products for the purpose of testing and marketing within the United States and/or to import into the United States and sell the '130 Accused Products in the United States as Defendants' agents, and (c) Defendants are vicariously liable for other third parties' use, including end-users' use, of the accused system by controlling the entire system and deriving a benefit from the use of every element of the entire system.

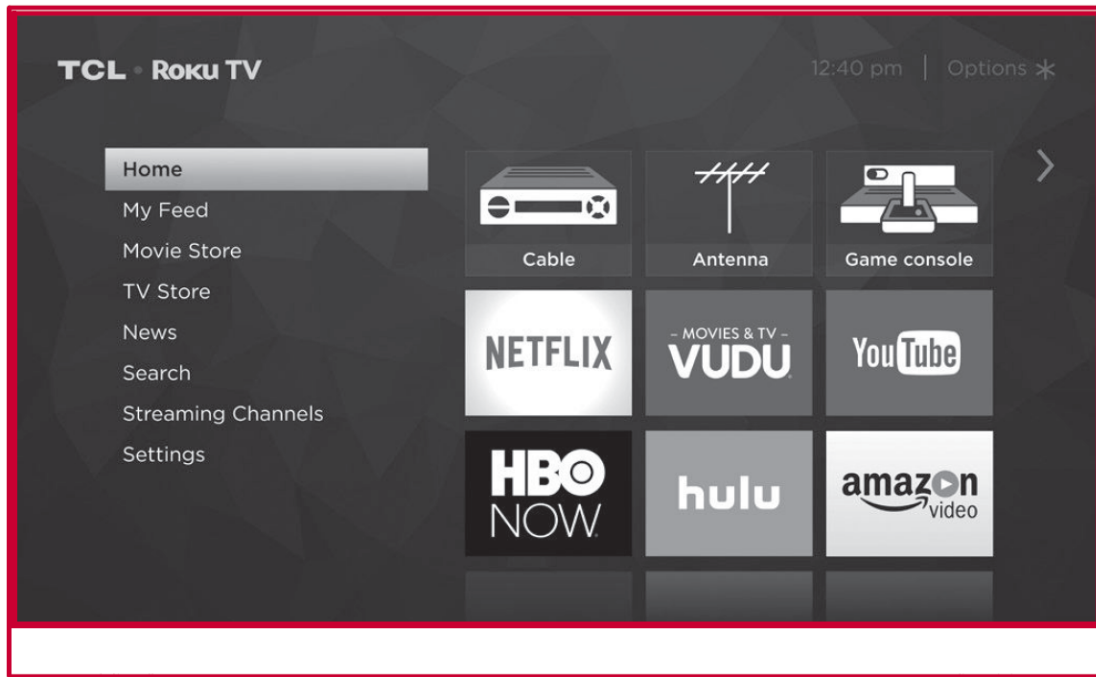
216. Similarly, to the extent the third parties perform a step or steps of the patented method and/or the '130 Accused Products incorporate third parties' modules, components or

software that perform one or more patented steps, Defendants still infringe the '130 Patent because (a) Defendants are vicariously liable for third parties' use, including TTE's use, of the '130 Accused Products thereby performing the patented method steps and/or (b) Defendants condition receipt by the third parties of a benefit upon performance of a step or steps of the patented method and establish the manner or timing of that performance.

217. For example, according to TCL Electronics Holding Ltd.'s Annual Report (2018), "Management monitors the results of the Group's operating segments separately for the purpose of making decisions about resources allocation and performance assessment" where the Group's operating segments include various third party subsidiaries of TCL Electronics Holding Ltd., including TTE. *See* Ex. 19 at 17. Upon information and belief, Defendants maintain a "vertically integrated supply chain" and direct and authorize third parties, including TTE, to use, sell and/or import to the United States products, including the '130 Accused Products, only through the "vertically integrated supply chain." *See* Ex. 20 (<https://www.tclusa.com/about-us/press-release/tcl-north-american-growth>) ("With extensive manufacturing expertise, a vertically integrated supply chain, and state-of-the-art panel factory, TCL offers innovative televisions, including the award-winning TCL® Roku TV™.").

218. As a way of illustration, each of the '130 Accused Products receives and displays streaming contents through an internet.





[https://www.tclusa.com/sites/default/files/2017-07/C-Series\\_Quick\\_Start\\_Guide.pdf](https://www.tclusa.com/sites/default/files/2017-07/C-Series_Quick_Start_Guide.pdf)

## Preparing for Internet connectivity

If you want to watch streaming content and take advantage of the cool features of your TCL • Roku TV, connect it to the Internet through a wireless modem/router or a wireless access point (not provided). The TV has a built-in wireless LAN adapter.

Ex. 12 ([https://www.tclusa.com/sites/default/files/2017-](https://www.tclusa.com/sites/default/files/2017-12/8.0%20User%20Manual%20C%20Series%20Final%201.pdf)

[12/8.0 User Manual C Series Final 1.pdf](https://www.tclusa.com/sites/default/files/2017-12/8.0%20User%20Manual%20C%20Series%20Final%201.pdf)). The '130 Accused Products also store URL information of the streaming contents:

## Recent Searches

The next time you use Roku Search, the **Search** screen displays a list of recent search selections in place of the search instructions.

Using the recent search selections list makes it easy to quickly get to a previously found item, for example, to find another movie with the same actor, or another TV show in the same series.

Ex. 12 ([https://www.tclusa.com/sites/default/files/2017-12/8.0\\_User\\_Manual\\_C\\_Series\\_Final\\_1.pdf](https://www.tclusa.com/sites/default/files/2017-12/8.0_User_Manual_C_Series_Final_1.pdf)).

218. Upon information and belief, the '130 Accused Products include an operation unit for receiving an operation of turning off and turning on a power source for supplying power, a buffering unit for buffering the moving image-streaming content received by the '130 Accused Products and a control unit that reads out the URL information stored in its memory, controls, while the power source is in an off state, to periodically repeat accessing of a URL of the moving image-streaming content which had been displayed previously, buffer the content and display the latest buffered content after turning on the power source.

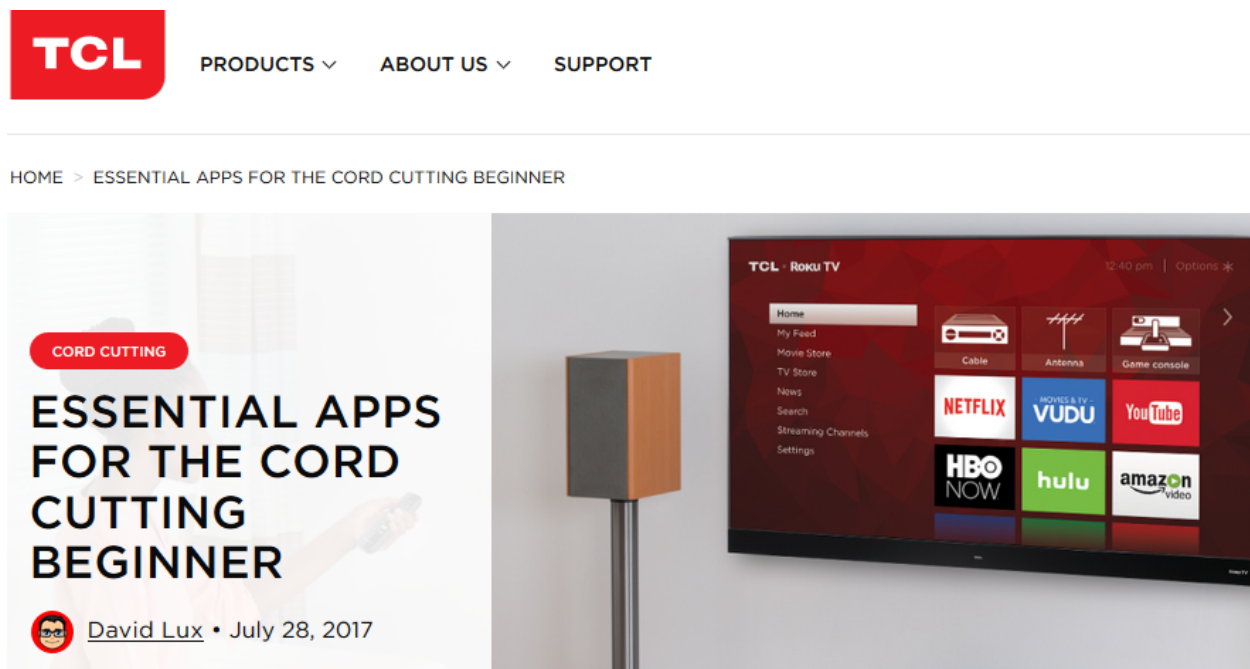
219. For example, the '130 Accused Products buffer and record streaming contents through the use of "streaming channels" that have Cloud DVR functionality such as DirecTV Now, Sling TV and YouTube TV while either the '130 Accused Products are turned off or while the user is viewing different programs such as Cable TV programs. Upon information and belief, the '130 Accused Products accomplish this by having their CPUs repeatedly access the URL information of the streaming contents stored in their memory. And the '130 Accused Products allow users to enjoy the buffered streaming contents after turning on the power source

or reconnecting to the Cloud DVR application that provides the streaming content. As shown below, Defendants instructs and encourages its customers to use the '130 Accused Products to access these Cloud DVR applications:

## Add streaming channels

You can add streaming channels by searching in the Roku Channel Store. New streaming channels are added to the bottom of the Home screen. If you want to move the channel tile to a different position in the grid, see [Rearrange tiles](#).

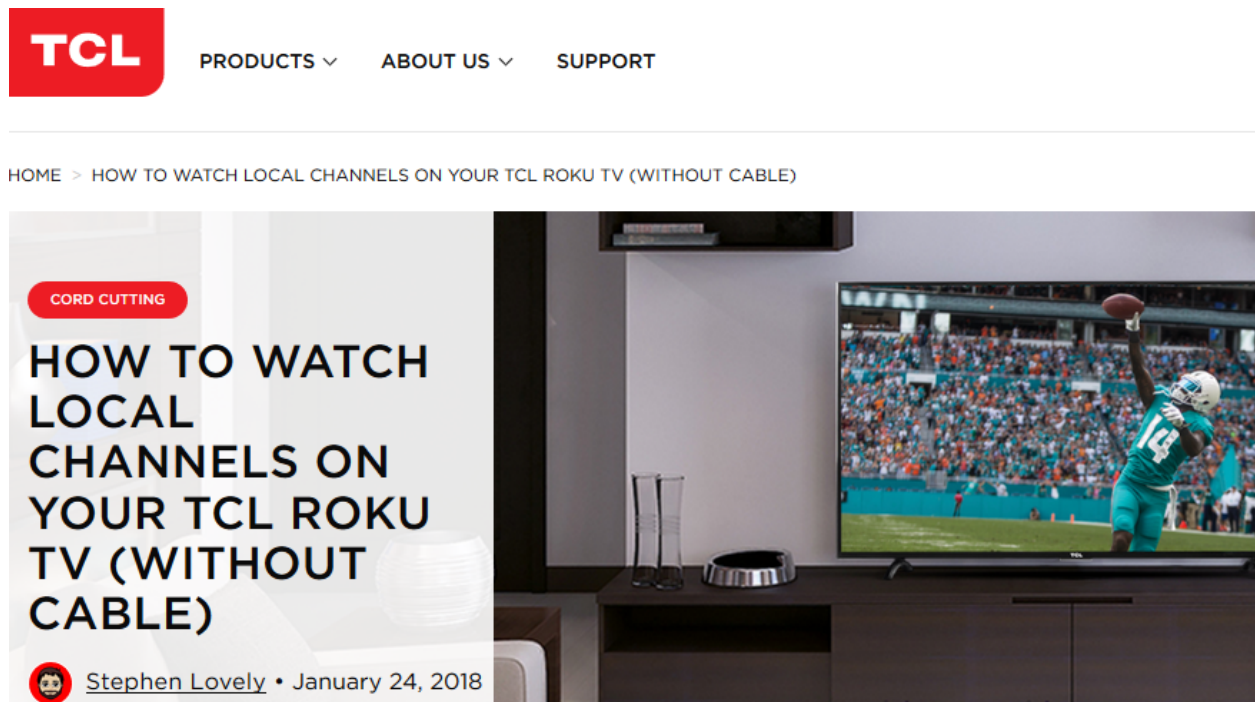
Ex. 17 ([https://www.tclusa.com/sites/default/files/2017-12/8.0\\_User\\_Manual\\_S\\_Series\\_Final\\_4.pdf](https://www.tclusa.com/sites/default/files/2017-12/8.0_User_Manual_S_Series_Final_4.pdf))



### Sling TV

Sling TV prides itself on offering a la carte TV. It's the only live service that lets you personalize your channel lineup. This means no more useless channels, and no long-term commitments, making it a popular choice among cord cutters. The base Sling Orange service offers 30 channels including ESPN, Disney Channel, AMC, TNT, TBS, and CNN, and you can always add more channels you want. Plans start at \$20 /mo.

Ex. 16 (<https://www.tclusa.com/blog/essential-cord-cutting-apps>)



The live TV streaming service market is relatively young right now, but it's already crowded with competition (which is another advantage it has over cable and satellite!). Here are a few options to consider:

- **DirectTV Now:** AT&T's skinny bundle includes all four major networks, plus regional sports coverage.
- **fuboTV:** Once a soccer-focused service, this skinny bundle now offers a broader range of channels, including CBS, Fox, and NBC, plus regional sports networks.
- **Hulu with Live TV:** The live TV offering from the longtime on-demand service Hulu includes all four major networks and some regional sports coverage.
- **PlayStation Vue:** Don't sweat the name – PlayStation Vue is available on your TCL Roku TV, not just on the gaming system it shares a name with. PlayStation Vue offers all four major networks, plus regional sports networks.
- **Sling TV:** Sling TV is Dish's entry into the market, and includes ABC, Fox, and NBC, plus a selection of regional sports networks.
- **YouTube TV:** YouTube TV isn't available everywhere yet, but it offers all four major networks and some regional sports coverage.

Ex. 15 (<https://www.tclusa.com/blog/how-to-watch-local-channels-without-cable>).

The screenshot shows the top of a TCL website. At the top left is the TCL logo. To its right are navigation links: PRODUCTS, ABOUT US, and SUPPORT. Below this is a breadcrumb trail: HOME > YOUTUBE TV COMES TO TCL ROKU TVS. The main content area features a large graphic with the text 'YOUTUBE TV COMES TO TCL ROKU TVS' in bold, black, sans-serif font. To the right of this text is a large, stylized 'YouTubeTV' logo. Above the main text is a red pill-shaped button with the text 'CORD CUTTING'. Below the main text is a small circular profile picture of David Lux, followed by the text 'David Lux • February 01, 2018'.

With YouTube TV, you can enjoy live, cable-free TV without a set top box. From live sports to breaking news, watch all your favorite content from dozens of your favorite networks. Plus, it comes with unlimited cloud DVR storage—record live TV and never run out of storage!

YouTube TV is available in the Roku Channel Store now. To add the channel, go to Streaming Channels on your TCL Roku TV to open the Channel Store or [click here](#).

Ex. 14 (<https://www.tclusa.com/blog/youtube-tv-streaming-channel>).

220. Accordingly, Defendants have infringed and are continuing to infringe the '130 Patent.

221. As a result of Defendants' direct infringement of the '130 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' direct infringement, including without limitation not less than a reasonable royalty, together with interest and costs as determined by the Court.

222. Defendants' direct infringement of the '130 Patent has caused and is causing damage and irreparable injury to Canon, and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

223. Defendants, moreover, are committing willful infringement of the '130 Patent because Defendants (1) continue to commit direct infringement of the '130 Patent, and (2) have had knowledge of the '130 Patent since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '130 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

**COUNT XIV**  
**(Induced Infringement of the '130 Patent pursuant to 35 U.S.C. §271(b))**

224. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

225. Defendants have induced and are continuing to induce infringement of Claims 1-8 of the '130 Patent by taking active steps to encourage and facilitate direct infringement by others,

including agent-subsidaries, affiliates, partners, CDN service providers, Cloud DVR service providers, importers, resellers, customers and/or end users, in this District and elsewhere in the United States, through the dissemination of the '130 Accused Products and the creation and dissemination of promotional and marketing materials, supporting materials, instructions, product manuals, and/or technical information relating to such products with knowledge and the specific intent that their efforts will result in the direct infringement of the '130 Patent.

226. On information and belief, at the behest of Defendants and as a direct result of their instigation, control, and direction, acting as their agents TTE and/or Roku thus offered for sale and sold in the United States, and imported into the United States, without authorization, the '130 Accused Products.

227. For example, according to TCL Electronics Holding Ltd.'s Annual Report (2018), "Management monitors the results of the Group's operating segments separately for the purpose of making decisions about resources allocation and performance assessment" where the Group's operating segments include various third party subsidiaries of TCL Electronics Holding Ltd., including TTE. *See* Ex. 19 at 17. Upon information and belief, Defendants maintain a "vertically integrated supply chain" and direct and authorize third parties, including TTE, to use, sell and/or import to the United States products, including the '130 Accused Products, only through the "vertically integrated supply chain." *See* Ex. 20 (<https://www.tclusa.com/about-us/press-release/tcl-north-american-growth>) ("With extensive manufacturing expertise, a vertically integrated supply chain, and state-of-the-art panel factory, TCL offers innovative televisions, including the award-winning TCL® Roku TV™.").



228. Defendants have also induced and are continuing to induce infringement of Claims 1-8 of the '130 Patent by encouraging, instructing, and/or directing third parties, including end users, to use the '130 Accused Products in a way that directly infringes the '413 Patent, either literally or under the doctrine of equivalents.

229. Each of the '130 Accused Products meets all limitations of the apparatus claims of the '130 Patent. *See* Count XIII above. Thus, third parties, including end users, who use the '130 Accused Products in the United States, also directly infringe the apparatus claims of the '130 Patent.

230. For example, Defendants, directly or through intermediaries, including its subsidiaries, make available to third parties instructions on how to use the '130 Accused Products. *See, e.g.,* Ex. 8 (TCL C-Series User Guide 8.0); Ex. 9 (TCL C-Series Quick Start Guide); Ex. 11 (<https://www.tclusa.com/blog/youtube-tv-streaming-channel>); Ex. 13 (<https://www.tclusa.com/blog/how-to-watch-local-channels-without-cable>); Ex. 14 (<https://www.tclusa.com/blog/essential-cord-cutting-apps>); Ex. 15 (<https://www.tclusa.com/products/home-theater/c-series/tcl-55-class-c-series-4k-uhd-hdr-roku-smart-tv-55c807>); Ex. 10 ([https://www.tclusa.com/sites/default/files/2017-12/8.0\\_User\\_Manual\\_S\\_Series\\_Final\\_4.pdf](https://www.tclusa.com/sites/default/files/2017-12/8.0_User_Manual_S_Series_Final_4.pdf)) at 85; Ex. 14 (<https://www.tclusa.com/blog/essential-cord-cutting-apps>); Ex. 13 (<https://www.tclusa.com/blog/how-to-watch-local-channels-without-cable>); Ex. 11 (<https://www.tclusa.com/blog/youtube-tv-streaming-channel>).

231. Use of the '130 Accused Products, in accordance with such instructions, directly infringes the '130 Patent. *See* Count XIII above. Upon information and belief, third parties,



including end users, are engaging in such use and are therefore directly infringing the '130 Patent, having been induced to do so by Defendants.

232. Defendants have had knowledge of the '130 Patent and the '130 Accused Products' infringement of the '130 Patent or have been willfully blind to such infringement since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '130 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

233. Despite this knowledge of the '130 Patent and the '130 Accused Products' infringement of the '130 Patent, Defendants have continued to act with specific intent to induce the infringement of the '130 Patent.

234. Accordingly, Defendants have induced and are continuing to induce infringement of the '130 Patent.

235. As a result of Defendants' induced infringement of the '130 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' induced infringement, including without limitation, not less than a reasonable royalty, together with interest and costs as determined by the Court.

236. Defendants' induced infringement of the '130 Patent has caused and is causing damage and irreparable injury to Canon and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

**COUNT XV**  
**(Contributory Infringement of the '130 Patent pursuant to 35 U.S.C. §271(c))**

236. Canon repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

237. Defendants have contributed to and are continuing to contribute to the infringement of Claims 1-8 of the '130 Patent by providing the components of the '130 Accused Products to others, including agent-subsidaries, affiliates, partners, CDN service providers, Cloud DVR service providers, importers, resellers, customers and/or end users, including TTE and Roku, who makes, sells, offers for sale, and/or uses the '130 Accused Products in the United States and also imports the '130 Accused Products into the United States.

238. For example, each of the '130 Accused Products meet all limitations of the apparatus claims of the '130 Patent. *See* Count XIII above. Thus, others, including agent-subsidaries, affiliates, partners, CDN service providers, Cloud DVR service providers, importers, resellers, customers and/or end users, including TTE and/or Roku, directly infringe the apparatus claims of the '130 Patent by making, selling, offering for sale, and/or using the '130 Accused Products in the United States, and also importing the '130 Accused Products into the United States.

239. Use of the '130 Accused Products, moreover, infringes the method claims of the '130 Patent because such use leads to the performing of each and every step of the claimed methods. *See* Count XIII above. Thus, others, including agent-subsidaries, affiliates, partners, CDN service providers, Cloud DVR service providers, importers, resellers, customers and/or end users, including TTE and Roku, each directly infringes the method claims of the '130 Patent when using the '130 Accused Products in the United States.

240. The components of the '130 Accused Products that Defendants provide to others, including agent-subsidaries, affiliates, partners, CDN service providers, Cloud DVR service providers, importers, resellers, customers and/or end users, including TTE and Roku, include, at

least, the smart TV hardware of the '130 Accused Products. *See* Ex. 21 (Roku 2018 Form 10-K) at 7 (“Roku TVs integrate our Roku Operating System, or Roku OS, and leverage our smart TV hardware reference design. We work with our TV brand licensees to assist in all phases of the development of Roku TVs, including development, planning, manufacturing and marketing.”). On information and belief, these components are material to the infringing instrumentalities of the '130 Accused Products and are, consequently, material parts of the invention covered by the '130 Patent. *See* Count XIII above. Furthermore, on information and belief, these components are especially made or adapted for use in the '130 Patent and are not a staple article or commodity of commerce suitable for substantial non-infringing use.

241. Defendants had knowledge of the '130 Patent and the '130 Accused Products' infringement of the '130 Patent or have been willfully blind to such infringement since (A) at least December 27, 2018 when Canon filed a complaint for infringement of the '130 Patent against TCL Electronics Holding Ltd. or (B), at the latest, starting from the filing of this Amended Complaint. *See* Dkt. No. 1.

242. Accordingly, Defendants have contributed and are contributing to infringement of the '130 Patent.

243. As a result of Defendants' contributory infringement of the '130 Patent, Canon has suffered monetary damages and is entitled to recover from Defendants all damages Canon has sustained as a result of Defendants' contributory infringement, including without limitation not less than a reasonable royalty, together with interest and costs as determined by the Court.

244. Defendants' contributory infringement of the '130 Patent has caused and is causing damage and irreparable injury to Canon, and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

**PRAYER FOR RELIEF**

WHEREFORE, Canon respectfully requests the following relief from this Court:

(A) A judgment that Defendants have infringed one or more claims of each of the Asserted Patents;

(B) A judgment that Defendants have willfully infringed one or more claims of each of the Asserted Patents;

(C) A judgment that Defendants have indirectly infringed by inducing the infringement of one or more claims of each of the Asserted Patents;

(D) A judgment that Defendants have indirectly infringed by contributing to the infringement of one or more claims of each of the Asserted Patents;

(E) A judgment that each of the Asserted Patents is valid and enforceable;

(F) A judgment awarding Canon its damages resulting from Defendants' infringement of each of the Asserted Patents, and in no event less than a reasonable royalty;

(G) A judgment requiring Defendants to pay Canon's costs, expenses, and pre-judgment and post-judgment interest for Defendants' infringement of each of the Asserted Patents;

(H) An order and judgment permanently enjoining Defendants and their officers, directors, agents, servants, employees, affiliates, attorneys, and all others acting in privity or in concert with them, and their parents, subsidiaries, divisions, successors and assigns from further acts of infringement of the Asserted Patents;

(I) A judgment finding that this is an exceptional case and awarding Canon its reasonable attorneys' fees incurred pursuant to 35 U.S.C. § 285; and

(J) Such other relief as the Court deems proper and just.

**JURY TRIAL DEMAND**

Canon hereby demands trial by jury on all issues so triable pursuant to Rule 38 of the Federal Rules of Civil Procedure on all issues so triable.

Dated: April 25, 2019

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