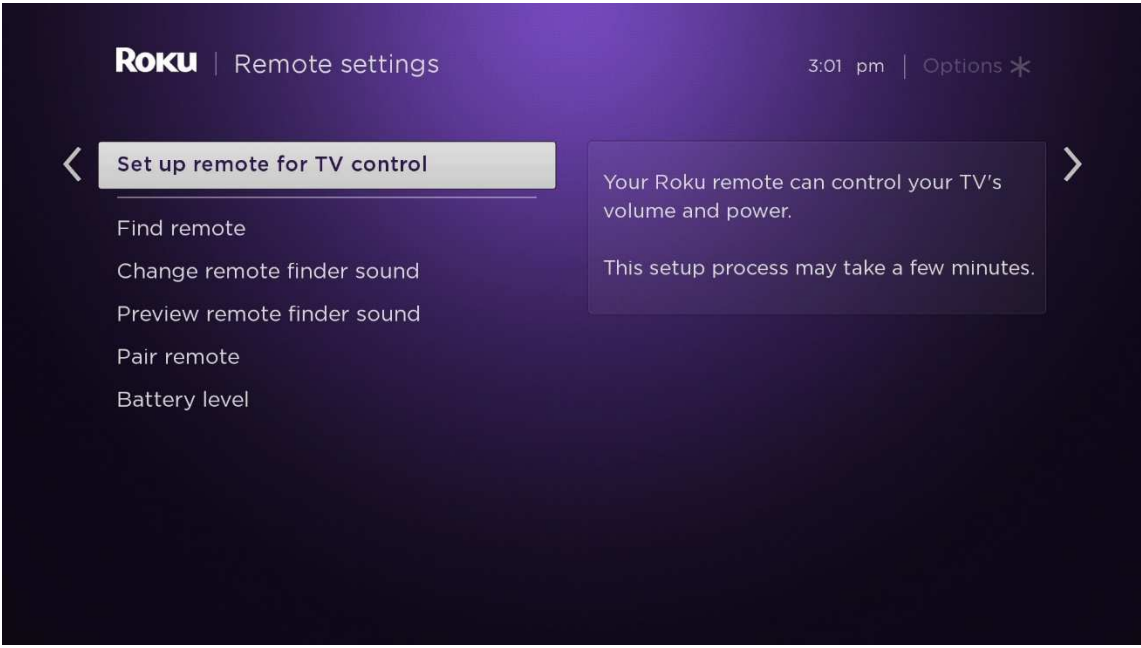


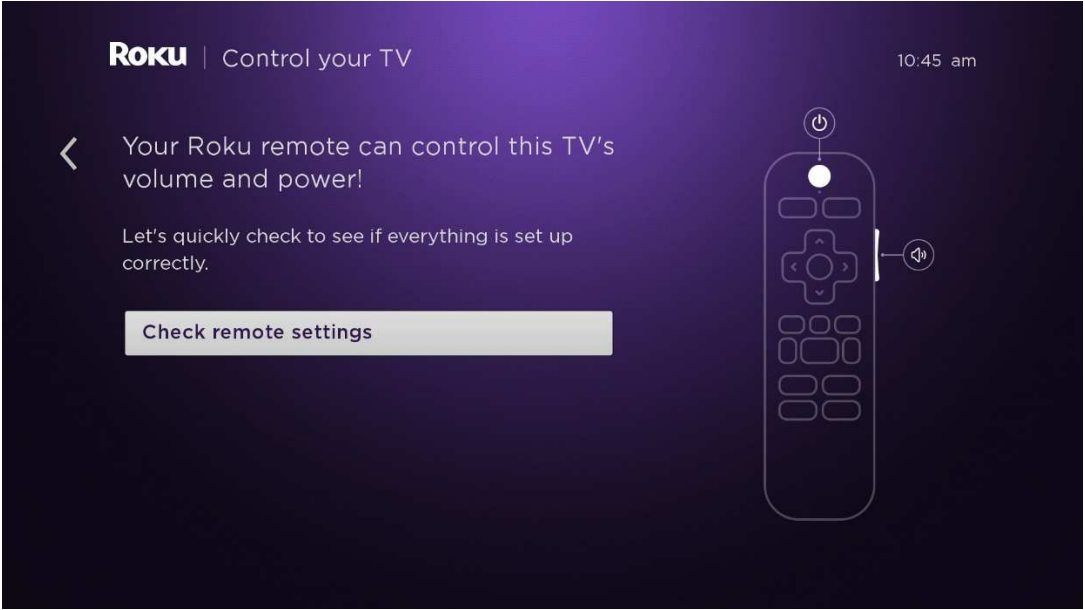
**Exhibit A-1: Infringement of U.S. Patent validity of U.S. Patent No. 7,589,642  
the Roku TV, Roku Ultra, Roku Premiere, Roku Premiere+, Roku StreamingStick, Roku StreamingStick+, Roku 4, and any variations  
of the same that include device power and volume control functionality discussed herein  
("Roku Streaming Products with Device Control")**


The infringement contentions are provided based on information obtained to date and may not be exhaustive. UEI's investigation of Roku's infringement is ongoing. UEI reserves the right to seek to supplement and/or amend these disclosures to identify additional asserted claims, accused instrumentalities, and/or to further identify where each element of each asserted claim is found in each accused instrumentality, including on the basis of discovery obtained from Roku and from third-parties during the course of this litigation.

The accused instrumentalities and associated documents discussed and/or cited herein are representative in all material aspects for all other accused instrumentalities identified in this chart. Based on information presently available to UEI, each of the Roku Streaming Products with Device Control is understood to operate in the same manner with respect to the contentions provided in this chart, unless otherwise noted. Roku has not yet produced evidence in this action, and UEI reserves the right to amend its contentions as to these products should Roku provide information showing any material differences among the products or any additional products containing the same functionality.

<b>Pat. No. 7,589,642</b>	<b>Roku Streaming Products with Device Control</b>
A method comprising:	<p>The Roku Streaming Products with Device Control perform when a user chooses to "Set up a remote for TV control."</p> <p>Set up a remote for TV control:</p>

Pat. No. 7,589,642	<b>Roku Streaming Products with Device Control</b>
	 <p>The screenshot shows the Roku interface for remote settings. At the top, it says 'Roku   Remote settings' and '3:01 pm   Options *'. A list of options is shown: 'Set up remote for TV control' (highlighted), 'Find remote', 'Change remote finder sound', 'Preview remote finder sound', 'Pair remote', and 'Battery level'. A callout box on the right says: 'Your Roku remote can control your TV's volume and power. This setup process may take a few minutes.'</p> <p>Additionally, at least the products comprising Roku streaming players will perform the claimed method when the user completes the “Control your TV” portion of the devices’ initial setup:</p>

Pat. No. 7,589,642	Roku Streaming Products with Device Control
	 <p>(images taken from <a href="https://support.roku.com/article/115013019828-how-do-i-set-up-my-roku-enhanced-remote-to-control-my-tv-">https://support.roku.com/article/115013019828-how-do-i-set-up-my-roku-enhanced-remote-to-control-my-tv-</a>, UEI_001310).</p> <p>See also <a href="https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-">https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-</a>, UEI_001327 (providing instructions for setting up the Roku Enhanced Remote).</p>
<p>receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has pressed;</p>	<p>The Roku Streaming Products with Device Control receive a keystroke indicator signal from the Roku remote control, wherein the keystroke indicator signal indicates a key on the Roku remote that the user has pressed.</p> <p>A user of a Roku Streaming Product presses one of the keys on the Roku remote:</p>

Pat. No. 7,589,642	Roku Streaming Products with Device Control
	<div style="text-align: center;">  </div> <p>The Roku Streaming Products will respond (or not respond) based on which button is pressed on the remote control due to a signal received from the remote, which is a keystroke indicator signal.</p>
<p>generating a key code within a code generator device using the stroke indicator signal;</p>	<p>The Roku Streaming Products with Device Control are key code generators that generate a key code using the keystroke indicator signal.</p> <p>An example of a generated key code is the code that corresponds to a function of an external device, such as volume or power. This process occurs during set-up and regular operation of the Roku Streaming Products.</p> <p>Roku informs its customers that the Roku players narrow the list of “remote codes” during remote setup and program the “correct code” to the remote. (<i>See, e.g.</i>, <a href="https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-">https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-</a>, UEI_001327 at 28).</p>
<p>modulating said key code onto a carrier signal, thereby generating a code signal; and</p>	<p>The Roku Streaming Products with Device Control can modulate key codes onto a carrier signal to communicate with the Roku remote. The Roku Streaming Products with Device Control communicate with the Roku remotes by modulating data onto wireless signals, e.g., Wi-Fi or Wi-Fi Direct. For example, the Roku Streaming Products with Device Control program Roku remotes with remote codes for TVs. (<i>See, e.g.</i>, <a href="https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-">https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-</a>, UEI_001327 at 28). This programming is conducted via sending data over a carrier signal, e.g., a wireless connection.</p>
<p>transmitting said key code signal from said key code generator device to said remote control device.</p>	<p>The Roku Streaming Products with Device Control transmit said key code signal to the Roku remote.</p> <p>The Roku Streaming Products with Device Control program Roku remotes with remote codes for external devices, such as TVs. (<i>See, e.g.</i>, <a href="https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-">https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-</a>, UEI_001327 at 28). This</p>

Pat. No. 7,589,642	Roku Streaming Products with Device Control
	programming is conducted via sending data over a carrier signal, e.g., a wireless connection via Wi-Fi or Wi-Fi Direct.
The method of claim 1, wherein the key code consists of a binary number.	The key codes discussed in claim 1 consist of a binary number. The Roku Streaming Devices with Device Control control external devices, such as a TV, via either IR or CEC (relayed through the Roku device). Both IR and CEC data comprise a binary number.
The method of claim 1, wherein the key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.	<p>The key code discussed in claim 1 comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.</p> <p>The Roku Streaming Devices with Device Control control the TV via either IR or CEC (relayed through the Roku device). Both IR and CEC data comprise a binary number, which represents the data. Both IR and CEC also require timing information in order to send the data.</p>
The method of claim 1, wherein the carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein the method further comprises:	<p>The carrier signal discussed with respect to claim 1 is in a radio frequency band, wherein said key code signal is received by said the Roku remote paired with the Roku Streaming Product with Device Control.</p> <p>The Roku Streaming Products with Device Control have a remote containing a receiver to receive wireless signals from a Roku device via Wi-Fi or Wi-Fi Direct. <i>See, e.g.</i>, <a href="https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-">https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-</a>, UEI_001327 (“Some Roku Enhanced Remotes incorporate both wireless and infrared (IR) technologies to seamlessly control both your Roku streaming player and your TV.”).</p> <p>Roku devices send key codes to the Roku Streaming Products with Device Control during at least the remote setup process. <i>See, e.g.</i>, <a href="https://support.roku.com/article/115013019828-how-do-i-set-up-my-roku-enhanced-remote-to-control-my-tv-">https://support.roku.com/article/115013019828-how-do-i-set-up-my-roku-enhanced-remote-to-control-my-tv-</a>, UEI_001310; <i>see also</i> <a href="https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-">https://support.roku.com/article/360004786894-why-is-my-roku-enhanced-remote-not-controlling-volume-and-power-on-my-tv-</a>, UEI_001327.</p>

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