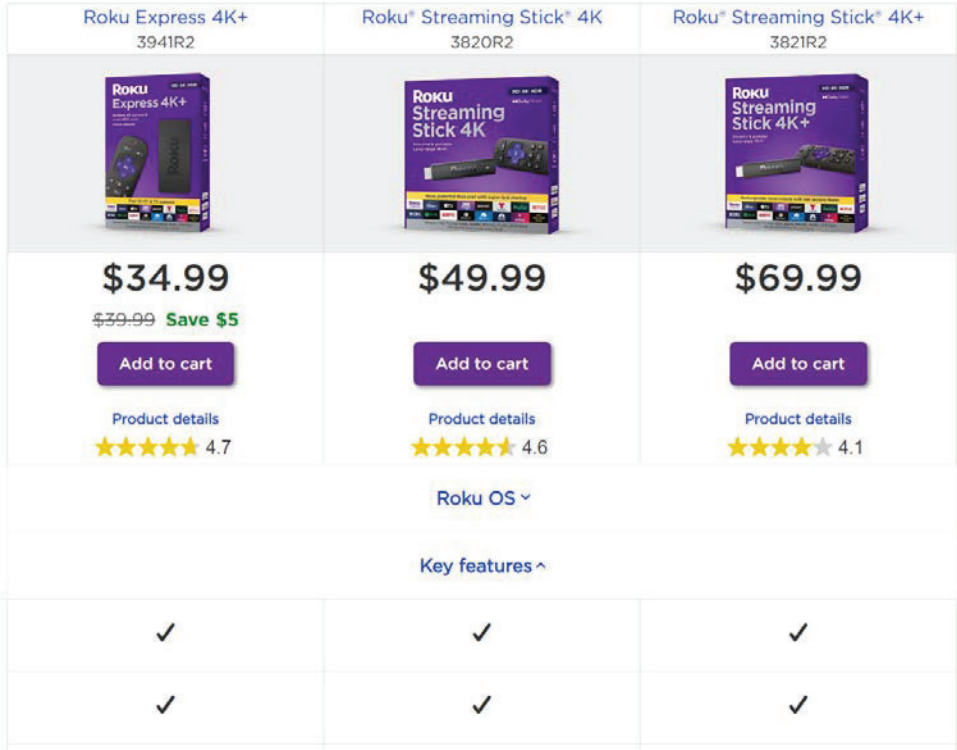
EXHIBIT 11

Exhibit 11 – U.S. Patent No. 8,291,236 ("'236 Patent")

Claim 130	Roku Accused Instrumentalities
130[pre] A conditional access server, comprising:	The Roku Accused Instrumentalities include Roku devices compatible with HDCP, including Roku devices configured to stream 4K and/or HDR content, such as, e.g., Roku's streaming players.



	Roku Express 4K+ 3941R2	Roku® Streaming Stick® 4K 3820R2	Roku® Streaming Stick® 4K+ 3821R2
	$34.99	$49.99	$69.99
	~~$39.99~~ Save $5		
	Add to cart	Add to cart	Add to cart
	Product details	Product details	Product details
	4.7	4.6	4.1
	Roku OS		
	Key features		
4K & HDR	✓	✓	✓
HDR10+	✓	✓	✓

See, e.g., https://www.roku.com/products/compare

Claim 130	Roku Accused Instrumentalities

	Roku Ultra 4802R	Roku® Streambar® 9102R	Roku® Streambar® Pro 9101R2
	$99.99 Add to cart	$129.99 Add to cart	$179.99 Add to cart
	Product details ★★★★½ 4.5	Product details ★★★★½ 4.5	Product details ★★★★½ 4.4
	Roku OS		
	Key features		
4K & HDR	✓	✓	✓
HDR10+	✓		

https://www.roku.com/products/compare

Claim 130	Roku Accused Instrumentalities

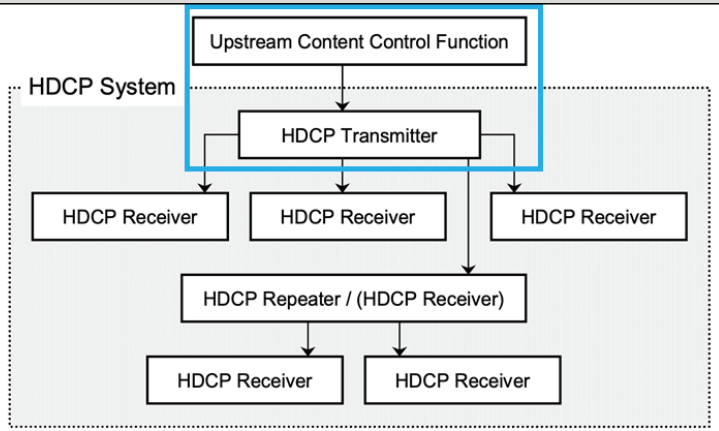
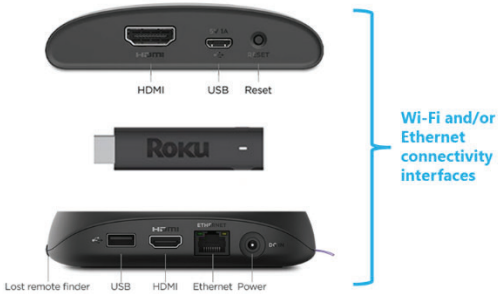
Device Name	Code Name	roDeviceInfo.GetModel()	CPU	Accelerated Graphics API	RAM	Max UI Resolution	Max Playback Resolution	HDR Support
Roku TV	Roxton	K000X	ARM Cortex A35	OpenGL ES 2.0	512 MB	720p	1080p/60fps	No
Roku TV (Brazil)	El Paso	8000X	ARM	OpenGL ES 2.0	512 MB	720p	1080p	No
Roku Smart Soundbar	Fruitland	9100X	ARM Cortex A53	OpenGL ES 2.0	1 GB	1080p	4K60fps, HDR	HDR10
Roku Streambar	Chico	9102X	MStar C2	OpenGL ES 2.0	1 GB	1080p/60fps	4K60fps, HDR	HDR10 and HLG
2K Roku TV	Miami	H000X	ARM quad core 1 GHz	OpenGL ES 2.0	512MB	720p	1080p/60fps	No
4K Roku TV	Reno	A000X	ARM quad core 1 GHz	OpenGL ES 2.0	1.5 GB	1920X1080	3840x2160	HDR10, Dolby Vision, and HLG supported, varies by model
4K Roku TV	Malone	C000X	ARM quad core 1 GHz	OpenGL ES 2.0	1 GB	1920X1080	3840x2160	HDR10, Dolby Vision, and HLG supported, varies by model
4K Roku TV	Athens	G000X	ARM quad core 1 GHz	OpenGL ES 2.0	1 GB	1920X1080	3840x2160	HDR10, Dolby Vision, and HLG supported, varies by model
4K Roku TV (EU)	Camden	C000GB	ARM quad core 1 GHz	OpenGL ES 2.0	1 GB	1920X1080	3840x2160	HDR10, Dolby Vision, and HLG supported, varies by model
8K Roku TV	Bandera	E000X	ARM quad core 1 GHz	OpenGL ES 2.0	1.5 GB	1920X1080	7,680x4,320	HDR10, Dolby Vision, and HLG supported, varies by model

See, e.g., https://developer.roku.com/docs/specs/hardware.md

To the extent the preamble is limiting, each Accused Instrumentality is a conditional access server. For example, the Accused Instrumentalities are HDCP-compliant devices that incorporate respective Roku platform applications resident in the memory thereon. The Accused Instrumentalities further include HDCP transmitter hardware, I/O circuitry and respective firmware to communicate using HDCP-based encryption and/or otherwise support HDCP functionality to serve HDCP-related content (e.g., for display).

Claim 130	Roku Accused Instrumentalities
	What is HDCP 2.2? The latest copy protection technology is called HDCP (High-bandwidth Digital Content Protection) and is used on HDMI connections for digital devices like Blu-ray™ players, cable boxes and Roku streaming devices. HDCP is the copy and content protection standard used by the movie and TV industry. Copy protection/content protection has been around for a long time, and in its early stages was what prevented you from copying commercial VHS tapes. **HDCP 2.2** is specifically designed for 4K Ultra HD content, as well as movies and TV shows available with High Dynamic Range. *See, e.g.*, https://support.roku.com/article/230317588 Why is HDCP 2.2 important to playing 4K Ultra HD or HDR content? To successfully stream 4K Ultra HD (4K) or High Dynamic Range (HDR) content, all devices connected via HDMI® to your compatible Roku® streaming player must support HDCP 2.2. This includes your TV, an audio/video receiver (AVR), and any other devices connected in between. If even one device does not support HDCP 2.2, then the 4K or HDR movie or TV show can only be viewed in a lower resolution, such as 720p or 1080p. *See, e.g.*, https://support.roku.com/article/230317588 The Accused Instrumentalities integrate a content DRM system such as PlayReady and/or Widevine with its HDCP transmitter (e.g., as shown in the blue box of the second image, below).

Claim 130	Roku Accused Instrumentalities
	Digital rights management (DRM) control attributes *Available since Roku OS 8.1* Digital rights management (DRM) content meta-data control attributes are available in the Roku OS through the drmParams parameter of type roAssociativeArray. The table below enum all usable attributes of drmParams. **Note:** Not all attributes are required, and may not have the same semantic meaning when applied to different DRM systems. **Attribute** / **DRM System** / **Type** / **Value** / **Example** appData / Playready, Widevine, Verimatrix: Optional / String / Special meaning per DRM system. If supplied, expected to be a base64 encoded string. / "SGF2ZSB0byBkZWFsIHdpdGggQmFzZTY0IGZ..." encodingKey / Playready: Optional / String / This field is deprecated; use the **licenseServerURL** field. Specifies the PlayReady license acquisition data, in format depending on the EncodingType attribute value specified: • when encodingType="PlayReadyLicenseAcquisitionUrl", the EncodingKey attribute contains the PlayReady license acquisition URL / "http://serverName/ encodingType / Playready: Optional / String / This field is deprecated; use the **licenseServerURL** field. Specifies the encoding scheme for PlayReady DRM, by setting to one of the following values: • "PlayReadyLicenseAcquisitionUrl" • "PlayReadyLicenseAcquisitionAndChallenge" Note, this is the same value that used to be specified directly in Content Metadata structure / "PlayReadyLicenseAcquisitionAndChallenge" KeySystem / Required for all / String / "playready" or "widevine". This value is case-insensitive. The default is an empty string. / "widevine" *See, e.g.*, https://developer.roku.com/en-gb/docs/developer-program/getting-started/architecture/content-metadata.md

Claim 130	Roku Accused Instrumentalities
	 **Figure 1.1. Sample Connection Topology of an HDCP System** *See, e.g.*, HDCP on HDMI Specification, Rev. 2.2
130[a] one or more communication interfaces, the one or more communication interfaces to receive security messages of a primary security system in a first security domain;	The Accused Instrumentalities include one or more communication interfaces, the one or more communication interfaces to receive security messages of a primary security system in a first security domain. For example, the Accused Instrumentalities receive streaming content, including security messages, via their respective wired or wireless Internet communication interfaces. 

Claim 130	Roku Accused Instrumentalities
	The Accused Instrumentalities receive security messages of a primary security system in a first security domain (e.g., security messages associated with a PlayReady and/or Widevine license and content distribution system).

	PlayReady	AES-128	Widevine
HLS			Y
Smooth	Y		
DASH	Y		Y

See, e.g., https://developer.roku.com/en-gb/docs/specs/media/content-protection.md

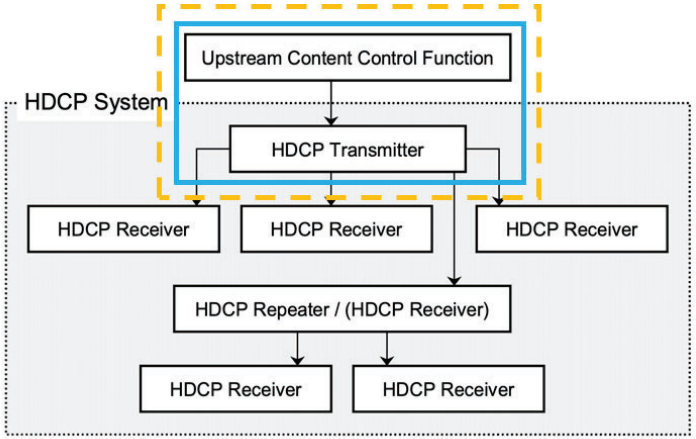
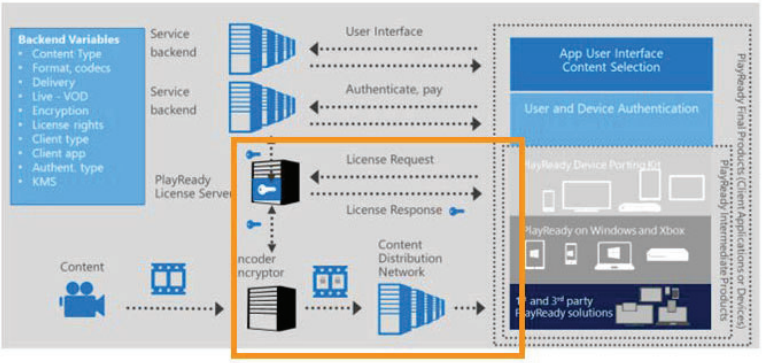


Figure 1.1. Sample Connection Topology of an HDCP System

See, e.g., HDCP on HDMI Specification, Rev. 2.2

As an example, a license received by a DRM (e.g., PlayReady and/or Widevine) license server is a security message.

Claim 130	Roku Accused Instrumentalities
	Deliver a license for the content When a client makes a license request, it sends the content's PlayReady Header to the license issuer. The license issuer extracts the KID and determines the corresponding key value, using one of the methods described above—if it uses the key seed mechanism, it just regenerates the key based on the KID and key seed. Then it generates a license including this key, which it sends back to the client in a *license response*. *See, e.g.*, https://learn.microsoft.com/en-us/playready/overview/key-and-key-ids-kids **PlayReady Certificate Authority** Microsoft owns the PlayReady Certificate Authority (PlayReady CA) including the PlayReady top level CA certificates, which gives Microsoft the authority to deliver PlayReady certificates to its customers, and revoke them whenever it is required to keep the ecosystem functional and secure. *See, e.g.*, https://learn.microsoft.com/en-us/playready/overview/certificates

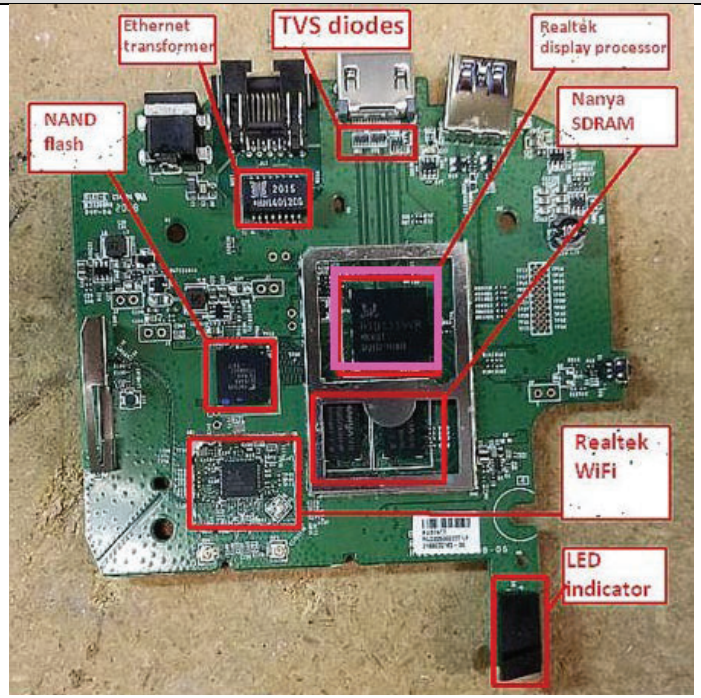
Claim 130	Roku Accused Instrumentalities
	 On the left side of the illustration you can see the service has some Servers to stream the video (content distribution network). There are also some Servers that let the users browse the content and choose the content they want to play (user interface). In addition, there are some Servers that allow the users to log in and be authenticated, as well as pay for content (authenticate, pay). And, there is also a PlayReady License Server. *See, e.g.*, https://learn.microsoft.com/en-us/playready/overview/simple-end-to-end-system HDCP enforcement requirements of the primary security system are contained within the license response. 3.6.5 **Output Control for Uncompressed Digital Video Content** If a PlayReady Product Passes the video portion of uncompressed decrypted A/V Content, the PlayReady Product must follow restrictions as specified in the License and this Section 3.6.5 (Output Control for Uncompressed Digital Video Content). In PlayReady Licenses and WMDRM-ND Licenses, the Output Protection Level is specified in the *Minimum Uncompressed Digital Video Output Protection Level* field of the *Output Protection Level Restriction Object*. In WMDRM-PD Licenses, this Output Protection Level is specified in the ***RESTRICTIONS\UNCOMPRESSEDDIGITALVIDEO*** node. *See, e.g.*, Compliance Rules for PlayReady Products

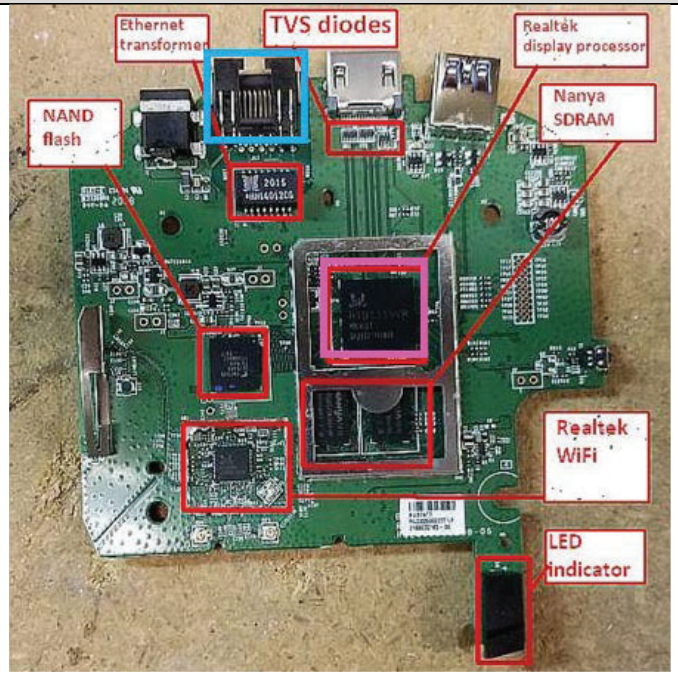
Claim 130	Roku Accused Instrumentalities
	content_key_specs. required_output_protection. hdcp | string - one of: HDCP_NONE, HDCP_V1, HDCP_V2 | Indicates whether HDCP is required. *Default = HDCP_NONE.* *Note: These must be capitalized, lowercase will result in a malformed request.* See Appendix. *See, e.g.*, Widevine DRM Proxy Integration
130[b] a processor coupled to the one or more communication interfaces, the processor to process the security messages, and the one or more communication interfaces to transmit, to a secondary conditional access client through a network connection in a second security domain, access controlled data that is in an access controlled format and that is at least partially derived from the security messages,	The Accused Instrumentalities include a processor coupled to the one or more communication interfaces, the processor to process the security messages, and the one or more communication interfaces to transmit, to a secondary conditional access client through a network connection in a second security domain, access controlled data that is in an access controlled format and that is at least partially derived from the security messages. For example, the Accused Instrumentalities incorporate a processor (e.g., a processor shown in the blue box of the first image below and/or shown in the pink box of the second image below) coupled to the one or more communication interfaces (e.g., WiFi and/or Ethernet network interfaces), to process security messages (e.g., the license responses containing HDCP enforcement requirements and decryption keys described above).

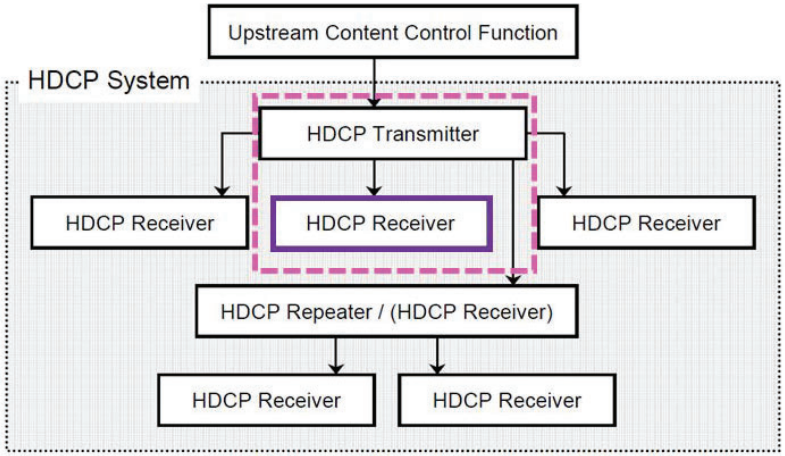
Claim 130	Roku Accused Instrumentalities

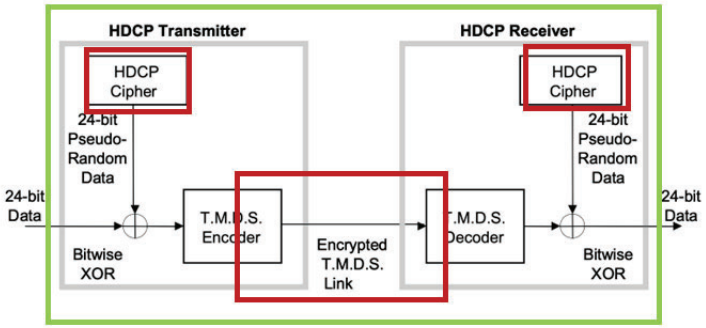
Device Name	Code Name	roDeviceInfo.GetModel()	CPU	Accelerated Graphics API	RAM	Max UI Resolution	Max Playback Resolution	HDR Support
Roku TV	Roxton	K000X	ARM Cortex A35	OpenGL ES 2.0	512 MB	720p	1080p/60fps	No
Roku TV (Brazil)	El Paso	8000X	ARM	OpenGL ES 2.0	512 MB	720p	1080p	No
Roku Smart Soundbar	Fruitland	9100X	ARM Cortex A53	OpenGL ES 2.0	1 GB	1080p	4K60fps, HDR	HDR10
Roku Streambar	Chico	9102X	MStar C2	OpenGL ES 2.0	1 GB	1080p/60fps	4K60fps, HDR	HDR10 and HLG
2K Roku TV	Miami	H000X	ARM quad core 1 GHz	OpenGL ES 2.0	512MB	720p	1080p/60fps	No
4K Roku TV	Reno	A000X	ARM quad core 1 GHz	OpenGL ES 2.0	1.5 GB	1920X1080	3840x2160	HDR10, Dolby Vision, and HLG supported, varies by model
4K Roku TV	Malone	C000X	ARM quad core 1 GHz	OpenGL ES 2.0	1 GB	1920X1080	3840x2160	HDR10, Dolby Vision, and HLG supported, varies by model
4K Roku TV	Athens	G000X	ARM quad core 1 GHz	OpenGL ES 2.0	1 GB	1920X1080	3840x2160	HDR10, Dolby Vision, and HLG supported, varies by model
4K Roku TV (EU)	Camden	C000GB	ARM quad core 1 GHz	OpenGL ES 2.0	1 GB	1920X1080	3840x2160	HDR10, Dolby Vision, and HLG supported, varies by model
8K Roku TV	Bandera	E000X	ARM quad core 1 GHz	OpenGL ES 2.0	1.5 GB	1920X1080	7,680x4,320	HDR10, Dolby Vision, and HLG supported, varies by model

See, e.g., https://developer.roku.com/docs/specs/hardware.md

Claim 130	Roku Accused Instrumentalities
	 As an additional example of a communication interface, the Accused Instrumentalities include an HDMI interface (e.g., as shown in the blue box below).

Claim 130	Roku Accused Instrumentalities
	 For the purpose of this specification, it is assumed that the Audiovisual content is transmitted over a HDMI based wired display link. In an HDCP System, two or more HDCP Devices are interconnected through an HDCP-protected Interface. The Audiovisual Content flows from the Upstream Content Control Function into the HDCP System at the most upstream HDCP Transmitter. From there the Audiovisual Content encrypted by the HDCP System, referred to as HDCP Content, flows through a tree-shaped topology of HDCP Receivers over HDCP-protected Interfaces. This specification describes a content protection mechanism for: (1) authentication of HDCP Receivers to their immediate upstream connection (i.e., an HDCP Transmitter), (2) revocation of HDCP Receivers that are determined by the Digital Content Protection, LLC, to be invalid, and (3) HDCP Encryption of Audiovisual Content over the HDCP-protected Interfaces between HDCP Transmitters and their downstream HDCP Receivers. HDCP Receivers may render the HDCP Content in audio and visual form for human consumption. HDCP Receivers may be HDCP Repeaters that serve as downstream HDCP Transmitters emitting the HDCP Content further downstream to one or more additional HDCP Receivers. *See, e.g.*, HDCP on HDMI Specification, Rev. 2.2

Claim 130	Roku Accused Instrumentalities
	The Accused Instrumentalities transmit to a secondary conditional access client (e.g., as shown in purple box below), such as a connected TV or other connected display device, via a HDMI network connection, in a second security domain (shown in pink box below), such as a HDCP encrypted security domain, access controlled data that is in an access controlled format (i.e., HDCP-encrypted content).  Figure 1.1. Sample Connection Topology of an HDCP System *See, e.g.*, HDCP on HDMI Specification, Rev. 2.2

Claim 130	Roku Accused Instrumentalities
	3 HDCP Encryption **3.1 Data Encryption** HDCP Encryption is applied at the input to the T.M.D.S. Encoder and decryption is applied at the output of the T.M.D.S. Decoder (Figure 3-1). HDCP Encryption consists of a bit-wise exclusive-or (XOR) of the HDCP Content with a pseudo-random data stream produced by the HDCP Cipher.  **Figure 3-1. HDCP Encryption and Decryption** *See, e.g.*, HDCP on HDMI Specification, Rev. 2.2 The access controlled data that is in an access controlled format (i.e., the HDCP encrypted content) is at least partially derived from the security messages. For example, the Accused Instrumentalities derive HDCP control information from the licensing information discussed above, including for 4K and UHD content.

Claim 130	Roku Accused Instrumentalities
	Each license contains the following information: • The content encryption key. • The rights of the license. • The right restrictions and right modifiers, also known as the conditions of the license. Before a client can decrypt the content associated with a license, it must retrieve the policy from the license. The content protection information within the license is encrypted using a client's public key or a client's domain's public key encryption information. The license is considered "bound" to the client or domain that has the private key for decrypting the content protection information. Clients acquire licenses either directly from License Servers or through a Proxy Server. *See, e.g.*, https://learn.microsoft.com/en-us/playready/overview/license-acquisition **Rights Restrictions and other Policies** The PlayReady Compliance Rules contain a full list of right modifiers (extensions and restrictions) that may apply to the license. Each of these modifiers has multiple properties: • **Action**—specifies the action of the policy (for example, engage HDCP encryption on the HDMI output). • **Optional**—specifies if the client must engage the action or must try to engage the action (for example, Output Control for Uncompressed Digital Video Content 250, see CR 3.6.5). *See, e.g.*, https://learn.microsoft.com/en-us/playready/overview/license-and-policies Content is transmitted to the connected TV, or other connected device, over the HDMI interface as HDCP encrypted content in accordance with the requirements of the HDCP enforcement security messages specified by the primary security system platform.

Claim 130	Roku Accused Instrumentalities

OPL	Compressed Digital Video	Uncompressed Digital Video		Analog TV
	Any	HDMI, DVI, DisplayPort, MHL		Component, Composite
0-100	Block	Passes content		Passes content
101-150				Passes content when CGMS-A CopyNever is engaged or if CGMS-A can't be engaged.
151-200				Passes content when CGMS-A CopyNever is engaged.
201-250		Attempts to engage HDCP, but passes content regardless of result.		Does NOT pass content
251-270		**SWDRM:** Attempts to engage HDCP. If HDCP fails to engage, the PC will constrain the effective resolution to 520,000 pixels per frame and pass the content.	**HWDRM:** Passes content with HDCP. If HDCP fails to engage, playback to HDMI/DVI ports is blocked.	
271-300		When HDCP type restriction is NOT defined:Passes content with HDCP. If HDCP fails to engage, playback to HDMI/DVI ports is blocked. When HDCP type restriction IS defined: Passes content with HDCP 2.2 and content stream type set to 1. If HDCP fails to engage or content stream type can't be set to 1, playback to HDMI/DVI ports is blocked.		
>300		Does NOT pass content		

See, e.g., https://learn.microsoft.com/en-us/playready/overview/output-protection-levels

<table>
<tr><th>Claim 130</th><th>Roku Accused Instrumentalities</th></tr>
<tr><td></td><td>
<table>
<tr><td>content_key_specs.
required_output_protection.
hdcp</td><td>string - one of:
HDCP_NONE,
HDCP_V1,
HDCP_V2</td><td>Indicates whether HDCP is required.

Default = HDCP_NONE.

Note: These must be capitalized, lowercase will result in a malformed request.

See Appendix.</td></tr>
</table>

See, e.g., Widevine DRM Proxy Integration</td></tr>
<tr><td>130[c] wherein the primary security system authenticates the conditional access server clients of the primary security system through a first authentication process using a first root of trust and the conditional access server authenticates clients of the conditional access server through a second authentication process which is independent of the first authentication process and</td><td>The primary security system authenticates the conditional access server clients of the primary security system through a first authentication process using a first root of trust. For example, the DRM (e.g., PlayReady and/or Widevine DRM) authenticates the Accused Instrumentality using a PlayReady and/or Widevine root of trust (PlayReady root of trust shown below).

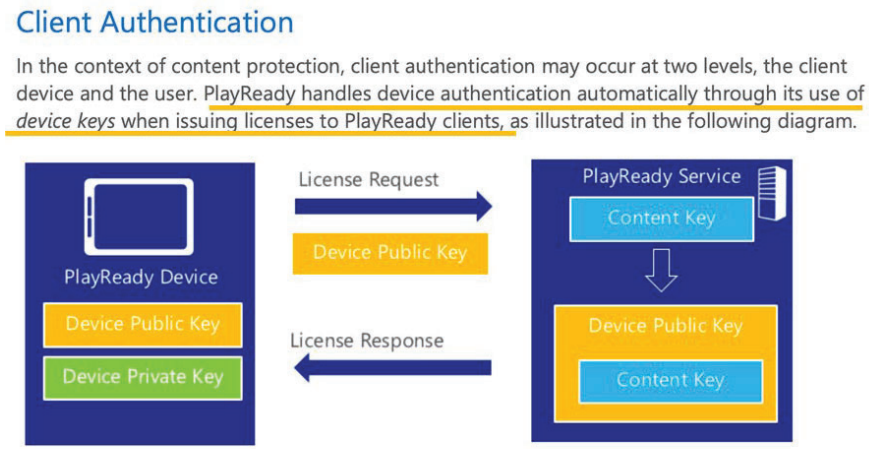


Figure 4 – Role of Device Keys in the Licensing Process

See, e.g., https://download.microsoft.com/download/B/D/4/BD42A75B-5B3E-49C0-B70D-DD49FA9592F9/DevelopingMicrosoftPlayReadyClients_March2015.pdf, p12</td></tr>
</table>

Claim 130	Roku Accused Instrumentalities
	Each PlayReady client device has a unique public-private key pair. When a client sends a license request to a license service, it includes its device public key. The license service uses that public key to verify that the client device is a valid PlayReady client before it issues the license. If the device is a valid PlayReady client, the license service uses the device's public key to encrypt the content key for the media file and then sends the resulting license to the client. The client must then use its device private key to decrypt and play back the content. This authentication model ensures that the issued license is valid and usable only on that device (in the case of the device binding). *See, e.g.*, https://download.microsoft.com/download/B/D/4/BD42A75B-5B3E-49C0-B70D-DD49FA9592F9/DevelopingMicrosoftPlayReadyClients_March2015.pdf, p12 **PlayReady Certificate Authority** Microsoft owns the PlayReady Certificate Authority (PlayReady CA) including the PlayReady top level CA certificates, which gives Microsoft the authority to deliver PlayReady certificates to its customers, and revoke them whenever it is required to keep the ecosystem functional and secure. *See, e.g.*, https://learn.microsoft.com/en-us/playready/overview/certificates The conditional access server authenticates clients of the conditional access server through a second authentication process which is independent of the first authentication process. For example, HDCP clients are authenticated using the HDCP authentication process (shown in the blue boxes in the below figures), which is different that the first authentication processes described above.

Claim 130	Roku Accused Instrumentalities
	2 Authentication Protocol **2.1 Overview** The HDCP authentication protocol is an exchange between an HDCP Transmitter and an HDCP Receiver that affirms to the HDCP Transmitter that the HDCP Receiver is authorized to receive HDCP Content. It is comprised of the following stages • Authentication and Key Exchange (AKE) – The HDCP Receiver's public key certificate is verified by the HDCP Transmitter. A Master Key k_m is exchanged. • Locality Check – The HDCP Transmitter enforces locality on the content by requiring that the Round Trip Time (RTT) between a pair of messages is not more than 20 ms. • Session Key Exchange (SKE) – The HDCP Transmitter exchanges Session Key k_s with the HDCP Receiver. The HDCP Transmitter contains the 3072-bit RSA public key of DCP LLC denoted by $kpub_{dcp}$. The HDCP Receiver is issued 1024-bit RSA public and private keys. The public key is stored in a Public Key Certificate issued by DCP LLC, denoted by $cert_{rx}$. Table 2.1 gives the fields contained in the certificate. All values are stored in big-endian format. **Table 2.1. Public Key Certificate of HDCP Receiver** *See, e.g.*, HDCP on HDMI Specification, Rev. 2.2, pp. 11-12
130[d] wherein the second authentication process uses a second root of trust which is	The second authentication process uses a second root of trust which is independent of and different from the first root of trust.

Name	Size (bits)	Bit position	Function
Receiver ID	40	4175:4136	Unique receiver identifier. It has the same format as an HDCP 1.x KSV i.e. it contains 20 ones and 20 zeroes
Receiver Public Key	1048	4135:3088	Unique RSA public key of HDCP Receiver denoted by $kpub_{rx}$. The first 1024 bits is the big-endian representation of the modulus n and the trailing 24 bits is the big-endian representation of the public exponent e
Reserved2	4	3087:3084	Reserved for future definition. Must be 0x0 or 0x1.
Reserved1	12	3083:3072	Reserved for future definition. Must be 0x000
DCP LLC Signature	3072	3071:0	A cryptographic signature calculated over all preceding fields of the certificate. RSASSA-PKCS1-v1_5 is the signature scheme used as defined by PKCS #1 V2.1: RSA Cryptography Standard. SHA-256 is the underlying hash function

Claim 130	Roku Accused Instrumentalities
independent of and different than the first root of trust, and	For example, the HDCP authentication process (shown in the blue boxes in the below figures) uses a different root of trust than the DRM (e.g., PlayReady and/or Widevine) root of trust (shown in the yellow boxes and highlighting in the below figures) (PlayReady example shown below). Each PlayReady client device has a unique public-private key pair. When a client sends a license request to a license service, it includes its device public key. The license service uses that public key to verify that the client device is a valid PlayReady client before it issues the license. If the device is a valid PlayReady client, the license service uses the device's public key to encrypt the content key for the media file and then sends the resulting license to the client. The client must then use its device private key to decrypt and play back the content. This authentication model ensures that the issued license is valid and usable only on that device (in the case of the device binding). *See, e.g.*, https://download.microsoft.com/download/B/D/4/BD42A75B-5B3E-49C0-B70D-DD49FA9592F9/DevelopingMicrosoftPlayReadyClients_March2015.pdf, p12 **PlayReady Certificate Authority** Microsoft owns the PlayReady Certificate Authority (PlayReady CA) including the PlayReady top level CA certificates, which gives Microsoft the authority to deliver PlayReady certificates to its customers, and revoke them whenever it is required to keep the ecosystem functional and secure. *See, e.g.*, https://learn.microsoft.com/en-us/playready/overview/certificates

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	2 Authentication Protocol **2.1 Overview** The HDCP authentication protocol is an exchange between an HDCP Transmitter and an HDCP Receiver that affirms to the HDCP Transmitter that the HDCP Receiver is authorized to receive HDCP Content. It is comprised of the following stages • Authentication and Key Exchange (AKE) – The HDCP Receiver's public key certificate is verified by the HDCP Transmitter. A Master Key k_m is exchanged. • Locality Check – The HDCP Transmitter enforces locality on the content by requiring that the Round Trip Time (RTT) between a pair of messages is not more than 20 ms. • Session Key Exchange (SKE) – The HDCP Transmitter exchanges Session Key k_s with the HDCP Receiver. The HDCP Transmitter contains the 3072-bit RSA public key of DCP LLC denoted by $kpub_{dcp}$. The HDCP Receiver is issued 1024-bit RSA public and private keys. The public key is stored in a Public Key Certificate issued by DCP LLC, denoted by $cert_{rx}$. Table 2.1 gives the fields contained in the certificate. All values are stored in big-endian format. **Table 2.1. Public Key Certificate of HDCP Receiver** *See, e.g.*, HDCP on HDMI Specification, Rev. 2.2, pp. 11-12
130[e] wherein the conditional access server is configured to substitute the first security	The conditional access server is configured to substitute the first security domain with the second security domain for the clients under the second root of trust.

Name	Size (bits)	Bit position	Function
Receiver ID	40	4175:4136	Unique receiver identifier. It has the same format as an HDCP 1.x KSV i.e. it contains 20 ones and 20 zeroes
Receiver Public Key	1048	4135:3088	Unique RSA public key of HDCP Receiver denoted by $kpub_{rx}$. The first 1024 bits is the big-endian representation of the modulus n and the trailing 24 bits is the big-endian representation of the public exponent e
Reserved2	4	3087:3084	Reserved for future definition. Must be 0x0 or 0x1.
Reserved1	12	3083:3072	Reserved for future definition. Must be 0x000
DCP LLC Signature	3072	3071:0	A cryptographic signature calculated over all preceding fields of the certificate. RSASSA-PKCS1-v1_5 is the signature scheme used as defined by PKCS #1 V2.1: RSA Cryptography Standard. SHA-256 is the underlying hash function

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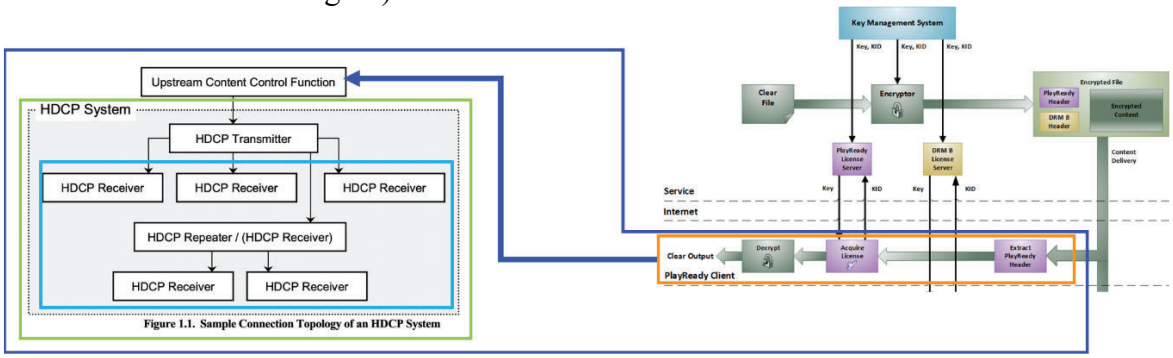
domain with the second security domain for the clients under the second root of trust.	For example, the Accused Instrumentalities are configured to decrypt the content in the first security domain (e.g., the PlayReady DRM-protected content (or Widevine DRM-protected content), shown in the orange box in the below figure) and re-encrypt the content with the second security domain (e.g., using HDCP encryption, shown in the light green box in the below figure) for client devices under a second root of trust (e.g., devices that support HDCP as shown in the light blue box in the below figure).  *See, e.g.*, HDCP on HDMI Specification, Rev. 2.2*;* https://learn.microsoft.com/en-us/playready/overview/playready-and-other-protection-technologies