IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

INTERDIGITAL, INC., INTERDIGITAL VC HOLDINGS, INC., AND INTERDIGITAL MADISON PATENT HOLDINGS, SAS, **Plaintiffs,** **v.** **AMAZON.COM SERVICES LLC,** **Defendant.**	**Civil Action No. _____** **JURY TRIAL DEMANDED**

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs InterDigital, Inc., InterDigital VC Holdings, Inc., and InterDigital Madison Patent Holdings, SAS (collectively, "Plaintiffs" or "InterDigital") bring this action for patent infringement against Amazon.com Services LLC ("Defendant" or "Amazon"). Plaintiffs, on personal knowledge as to their own acts, and upon information and belief as to all others based on diligent investigation, allege as follows:

NATURE OF THE ACTION

1. For years, Amazon has directly infringed and continues to infringe the following issued, valid, and enforceable United States Patents: U.S. Patent No. 10,741,211 ("the '211 Patent"); U.S. Patent No. 9,747,674 ("the '674 Patent"); U.S. Patent No. 8,363,724 ("the '724 Patent"); U.S. Patent No. 8,681,855 ("the '855 Patent"); and U.S. Patent No. 11,917,146 ("the '146 Patent") (collectively, the "Asserted Patents") (attached hereto as Exhibits 1-5). Plaintiffs accordingly file this Complaint seeking a judgment of and relief for Amazon's persistent and pervasive infringement of the Asserted Patents.

2. When companies use InterDigital's patented technologies without permission, InterDigital's practice is to engage such companies in good faith with the goal of carefully finding

a mutually beneficial solution with them. This solution usually takes the form of a globally negotiated patent license achieved through a mutual and trusting exchange of technical information and license offers, under the protection of confidentiality in order to resolve the unauthorized patent use by mutual agreement—and without resort to litigation. Consistent with its commitment to resolve intellectual property matters amicably, InterDigital undertook this approach with respect to Amazon.

3. Despite InterDigital's efforts in attempting to find a mutually agreeable solution to resolve Amazon's unauthorized use of its digital video technology, Amazon abruptly initiated litigation in the United Kingdom seeking declaratory relief unrelated to the patents asserted in this Complaint. It also launched litigation in Sao Paolo, Brazil challenging 18 of InterDigital's issued patents in that jurisdiction.

4. Amazon is not authorized to use InterDigital's Asserted Patents. This Complaint is therefore necessary to put an end to Amazon's infringing conduct. Today, Amazon continues its widespread infringement of the Asserted Patents by utilizing InterDigital's inventions that both enable high dynamic range (HDR) technology and promote efficiency in Amazon's Fire TV and Prime streaming businesses.

THE PARTIES

5. Plaintiff InterDigital, Inc. is a Pennsylvania corporation with its principal place of business at 200 Bellevue Parkway, Suite 300, Wilmington, DE 19809.

6. Plaintiff InterDigital VC Holdings, Inc. is a Delaware corporation with its principal place of business at 200 Bellevue Parkway, Suite 300, Wilmington, DE 19809. InterDigital VC Holdings, Inc. is a wholly owned subsidiary of InterDigital, Inc.

7. Plaintiff InterDigital Madison Patent Holdings, SAS is a French société par actions simplifiée (simplified joint stock company) with its principal place of business at 3 Rue du Colonel

Moll, Paris, France 75017. InterDigital Madison Patent Holdings, SAS is a wholly owned subsidiary of InterDigital, Inc.

8. Amazon.com Services LLC is a limited liability company organized under the laws of Delaware and, on information and belief, has a principal place of business at 410 Terry Ave. N, Seattle, WA 98109. On information and belief, Amazon.com Services LLC has participated in the sale or offer for sale of one or more Accused Products[1] and/or has provided digital services and content for use by the Accused Products.

9. Amazon.com Services LLC may be served through its registered agent Corporation Service Company, 251 Little Falls Dr., Wilmington, Delaware, 19808.

JURISDICTION AND VENUE

10. This Court has original jurisdiction over the subject matter of this action under 28 U.S.C. §§ 1331 and 1338(a) because the action arises under the patent laws of the United States.

11. Personal jurisdiction over Amazon is proper in this District based on one or more of the following: its presence in this judicial district; it has availed itself of the rights and benefits of the laws of Delaware; or it has derived substantial revenue from sales and/or use of Accused Products in Delaware and it has systematic and continuous business contacts with Delaware. Amazon was incorporated in Delaware and/or formed under the laws of Delaware and Amazon designs the Accused Products, which are advertised, offered for sale, sold, and used in Delaware.

12. Venue is proper in this district under 28 U.S.C. § 1400(b) and 28 U.S.C. §§ 1391(b)(1), (b)(2). For purposes of § 1400(b), Amazon was incorporated in Delaware and/or

[1] The Accused Products include both the HDR Accused Instrumentalities and the AV1/VP9 Accused Instrumentalities. The HDR Accused Instrumentalities include all Amazon devices capable of playing back HDR10, HDR10+, or Dolby Vision content. The AV1/VP9 Accused Instrumentalities includes all Amazon devices capable of decoding AV1 or VP9 content.

formed under the laws of Delaware and therefore resides within this District. For purposes of § 1391(b)(1), (b)(2), Amazon resides in the District of Delaware by virtue of being incorporated in Delaware and/or formed under the laws of Delaware.

13. Amazon maintains a regular and established place of business within this District. For example, and without limitation, Amazon has maintained a regular and established place of business with offices and/or other facilities located at 1025 Boxwood Rd., Wilmington, DE 19804 which, at 3.8 million square feet, is the largest Amazon fulfillment center in the United States.[2] Amazon additionally maintains offices in this District including at 560 Merrimac Ave 1437, Middletown, DE 19709 and 820 Federal School Lane, New Castle, DE 19720.

FACTUAL BACKGROUND

A. InterDigital And Its Persisting Innovation

14. InterDigital is one of the most successful and innovative research and development companies of the last half century, both domestically and globally. As a dynamic and groundbreaking engineering company, for more than fifty years InterDigital has been at the forefront of developing foundational video, wireless communication, and other digital technologies.

15. Every year, InterDigital pours a massive amount of money into its worldclass research and IP portfolio development engine. For example, in the most recently reported fiscal year alone, InterDigital reinvested well over nine figures—a sum representing nearly 50% of its recurring revenues—back into this cycle of innovation. At its facilities throughout the United States, and its bespoke video research laboratories in Rennes, France, InterDigital researches,

[2] Delaware Online, *Amazon Opens Mega-warehouse in Delaware*, https://www.delawareonline.com/story/money/business/2021/09/21/amazon-opens-mega-warehouse-delaware/8347000002/ (last visited Nov. 6, 2025).

develops, engineers, and licenses advanced video-related innovations as well as other cutting-edge technology. As discussed in further detail below, InterDigital has designed and developed a range of key technologies instrumental to video coding and related implementation techniques, including high dynamic range ("HDR") functionality.

16. InterDigital and its employees' technical contributions have been recognized all over the world. Its employees have held or currently hold more than 100 significant leadership positions on global industry-leading technology development and standard setting bodies. InterDigital has also won many awards for its technical discoveries. As just one example, InterDigital has been named as one of the world's 100 most innovative businesses by LexisNexis for the past three years.[3] As one of the world's largest pure research and innovation companies, InterDigital relies heavily on the cycle of invention to enable its future research and development efforts. In particular, InterDigital relies on obtaining fair compensation for its novel contributions to technological advancement in multiple industry segments, including in video coding, to fund its ongoing work breaking new ground for implementers and consumers alike.

17. Protecting its innovations is a key component to InterDigital's business and, to this end, it has a massive patent portfolio of over 33,000 patent assets, with a strong emphasis on wireless and video technologies. More specifically, InterDigital has approximately 6,800 patents in its video portfolio, with over 3,500 patents and applications relating to current and developing

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[3] *See Innovation Momentum 2022: The Global Top 100*, LEXISNEXIS (Jan. 18, 2022), https://go.lexisnexisip.com/hubfs/~IP%20-%20Intellectual%20Property%20Files/IP%20-%20PatentSight/2022%20Innovation%20Momentum%20Report/LexisNexis%20Innovation%20Momentum%20Report%202022.pdf; *Innovation Momentum 2023: The Global Top 100*, LEXISNEXIS (Jan. 2023), https://www.lexisnexisip.com/wp-content/uploads/2024/02/LexisNexis-Innovation-Momentum-Report-2023.pdf; *Innovation Momentum 2024: The Global Top 100*, LEXISNEXIS (Jan. 2024), https://go.lexisnexisip.com/hubfs/LexisNexis-Innovation-Momentum-Report-2024.pdf?hsCtaTracking=b73d2358-7d13-4732-afc6-e8a25be14c30%7C0b8f3fb0-888a-43b3-b2f6-70a6a3d96d87.

codec technologies such as AVC, HEVC, VP9, AV1, and VVC. InterDigital also has a portfolio of video-related patents including those related to improved dynamic range and many other improvements to the user video experience.

B. Video Coding Technology

18. Video coding technology refers to encoding video into a compressed form and decoding video so that it can be displayed and viewed by a user. This technology allows efficient transmission of video while at the same time maximizing quality.

19. In digital video, video content is represented by a series of images (called "frames"), which are displayed in sequence one after another to produce the illusion of motion. A frame is composed of many picture elements ("pixels"), which represent the smallest addressable unit of a digital video. These pixels are arranged in a grid, the resolution of which is expressed in terms of the number of pixels in the horizontal and vertical directions for each frame. For example, video with frames 1,920 pixels wide by 1,080 pixels high may be referred to as 1920x1080 or "1080p," commonly referred to as High Definition or HD. As another example, Ultra High Definition video, also known as UHD or 4K, typically has frames that are 3,840 pixels wide by 1,260 pixels high.

20. A pixel indicates the color of the portion of the frame it represents in terms of three color components. For example, a pixel may encode the red, green, and blue ("RGB") values of a unit of a frame or, equivalently, may encode the luminance, blue chrominance, and red chrominance ("YCbCr") components of a unit of a frame. Each of these components can be expressed as a collection of bits. For example, in 8-bit video each color component can take a value from 0 to 255 with 0 indicating the minimum amount of that component and 255 indicating the maximum. Thus, a black pixel would have the color components [0, 0, 0] and a white pixel would have the components [255, 255, 255]. Higher bit-depths, e.g., 10-bit video, allow a wider

range of colors to be represented—but require commensurately greater information per pixel.

21. While the number of pixels in a frame, and a screen capable of displaying them, can be expressed in height and width, or in X and Y axes, the color and quality characteristics of each individual pixel can be thought of as a separate Z axis. Each of these axes is important in playing high quality digital video.

22. Modern digital video typically consists of frames displayed at a rate of around 30 frames per second ("fps"), allowing the total amount of data required for a single second of video to be calculated. For an 8-bit 1080p video at 30 fps, each pixel requires 24 bits (3 components x 8 bits), and each frame consists of 1920x1080 or 2,073,600 pixels, representing a total of 49,766,400 bits. Given a frame rate of 30 fps, just one second of raw video would require transmitting or storing nearly 1.5 billion bits, or about 187 megabytes of data.

23. The massive amount of information and bandwidth required to store or transmit digital video is a fundamental problem, which experts in the field like InterDigital have aimed to solve by introducing a range of video encoders and decoders, often referred to as a "codecs" ("coder/decoder"), which allow video to be compressed prior to storage and transmission then later decompressed prior to display. Video codecs take advantage of mathematical and statistical techniques to eliminate redundancy in digital video and reduce the amount of information that must be stored and transmitted to reproduce its content. Modern video codecs are very efficient, allowing consumers of digital video to store many hours of content on disk or to stream digital video directly to their TVs, computers, tablets, smartphones, and other devices over the internet.

24. One example of modern video coding is VP9, a codec developed as a successor to VP8 and an alternative to H.265/HEVC. VP9 defines a format for compressing and decompressing digital video data that maximizes both efficiency and visual quality. Like earlier codecs, VP9

removes spatial and temporal redundancies to represent video content using far less data than raw, uncompressed video. In practical terms, VP9 offers compression efficiency comparable to or better than HEVC-often reducing file sizes by 30-50% relative to AVC (H.264) while maintaining similar perceptual quality. VP9 has been widely adopted in streaming platforms and browsers, particularly for delivery of 4K and HDR content on services such as YouTube.

25. Another codec is AV1, developed as a successor to both VP9 and HEVC. AV1 incorporates numerous technical improvements, including enhanced motion prediction, transform coding, and entropy coding, enabling up to 30% greater compression efficiency than HEVC at the same visual quality. AV1 has been increasingly adopted across the video ecosystem, with support from major technology companies and integration into hardware decoders, browsers, and streaming services. As demand grows for higher resolutions, wider color gamuts, and high dynamic range video, AV1 provides a scalable, efficient solution for next-generation internet video delivery.

C. HDR

26. High Dynamic Range ("HDR") video technology represents a major step forward in digital video, allowing content to display a much wider depth and range of brightness, contrast, and color than traditional Standard Dynamic Range ("SDR") video. The goal of HDR is simple: to make on-screen images look closer to what the human eye sees in the real world—bright highlights that still retain detail, deep shadows that do not crush to black, and richer, more realistic color overall.

27. In regular SDR systems, the image is limited to a narrow dynamic range and a smaller color space. This means bright parts of an image can look washed out and dark areas can lose detail. HDR expands both the brightness range and color gamut to cover far more of the visible spectrum. To make that work, HDR video includes extra information (called metadata) that tells

the display how bright or colorful different parts of the picture should be. This metadata can be static—applied once for the whole video—or dynamic, changing scene-by-scene or even frame-by-frame so each moment looks its best on the viewer's screen.

28. Among the most common HDR formats are HDR10, HDR10+, and Dolby Vision. HDR10 is an open format used across most modern TVs and streaming platforms. It relies on the Perceptual Quantizer ("PQ") transfer function defined in SMPTE ST 2084 and uses static metadata that describes the mastering display and content brightness levels. Dolby Vision builds on the same foundation but adds dynamic metadata defined in SMPTE ST 2094-10, allowing the tone-mapping process to adjust continually as scenes change. HDR10+, developed by Samsung and defined in SMPTE ST 2094-40, similarly adds dynamic metadata to the HDR10 framework. Together, these formats enable HDR playback across a wide range of devices, providing brighter highlights, deeper contrast, and more accurate color reproduction than conventional video.

D. Overview of the Asserted Patents

The '211 Patent

29. U.S. Patent No. 10,741,211 ("the '211 Patent") entitled "Information processing device, information recording medium, and information processing method," issued on August 8, 2020 and names Ryohei Takahashi and Kouichi Uchimura as the inventors. The '211 Patent is attached as Exhibit 1.

30. InterDigital VC Holdings, Inc. owns all rights, title, and interest in the '211 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

31. The '211 Patent is valid and enforceable and directed to patentable subject matter.

32. The '211 Patent is directed to systems and methods for recording and reproducing HDR image data in a standardized MP4 file format, ensuring that HDR content and associated

metadata can be stored and played back optimally across various display devices. Ex. 1 ('211 Patent) at 1:20-27. The invention addresses the absence of any established definition or mechanism in existing MP4 standards for recording HDR-specific metadata within MP4 files. *Id*. at 2:46-67.

33. Prior to the invention, MP4 was used as a recording and playback format for images, audio, and subtitles, including by portable devices such as smartphones and tablets. *Id*. at 5:20-36. However, while conventional MP4 structures supported storage of multiple media tracks through "trak," "moof," "traf," and "mdat" boxes, they lacked containers for HDR-specific metadata, such as luminance, color primaries, or mastering display information. *Id*. at 1:60-67, 6:1-10.

34. To overcome this deficiency, the '211 Patent modifies the traditional MP4 hierarchy to allow the storage of HDR metadata. *Id*. at 10:8-11, Figs. 5-8. This metadata includes, among other fields, a metadata identifier, the electro-optical transfer function (EOTF), color primaries (mastering display color volume), white point coordinates, and key luminance parameters such as Maximum Content Light Level (MaxCLL) and Maximum Frame-Average Light Level (MaxFALL). *Id*. at 10:16-53, Figs. 5-8.

35. The HDR image metadata enables playback devices to "determine whether executing a conversion process of the HDR image read from the MP4 file according to the acquired metadata and display function information of the display unit," and then "execute an output image generation process according to a determination result." *Id*. at 3:30-37, Abstract, 2:56-60, 4:15-20.

36. Through this architecture, the '211 Patent enables unified recording and playback of HDR image data in MP4 files, ensuring that metadata is embedded directly within the file hierarchy and accessible to playback devices for adaptive processing. *Id*. at 4:35-8. The invention thereby allows an HDR image and its metadata to be stored together such that "the reproduction

device can reproduce an optimum HDR image based on metadata." *Id*. at 4:21-24.

37. These technical advancements are reflected in the claims, which recite, for example, "acquire high dynamic range (HDR) image metadata from an MP4 file," "acquiring display function information of the display unit," and "execute a conversion process of the read HDR image data based on the acquired HDR image metadata and the acquired display function information of the display unit." *Id*. at Claims 1-3. The claimed methods and structures improve the functioning of video systems by enabling compatibility between HDR-encoded media and displays of varying capabilities through standardized, metadata-driven playback control. The ordered combination of elements—metadata acquisition, comparison to display capabilities, and adaptive image conversion—constitutes a specific, technical solution to an identified problem in digital video systems. The specification demonstrates that the inventors possessed the claimed subject matter and enables one of ordinary skill to implement the invention without undue experimentation.

The '674 Patent

38. U.S. Patent No. 9,747,674 ("the '674 Patent"), entitled "Method and device for converting an image sequence whose luminance values belong to a high dynamic range," issued on August 29, 2017 and names Ronan Boitard, Dominique Thoreaus, and Yannick Olivier as the inventors. The '674 Patent is attached as Exhibit 2.

39. InterDigital VC Holdings, Inc. owns all rights, title, and interest in the '674 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

40. The '674 Patent is valid and enforceable and directed to patentable subject matter.

41. The '674 Patent is directed to methods and devices for converting an image sequence whose luminance values belong to a HDR into an image sequence whose luminance

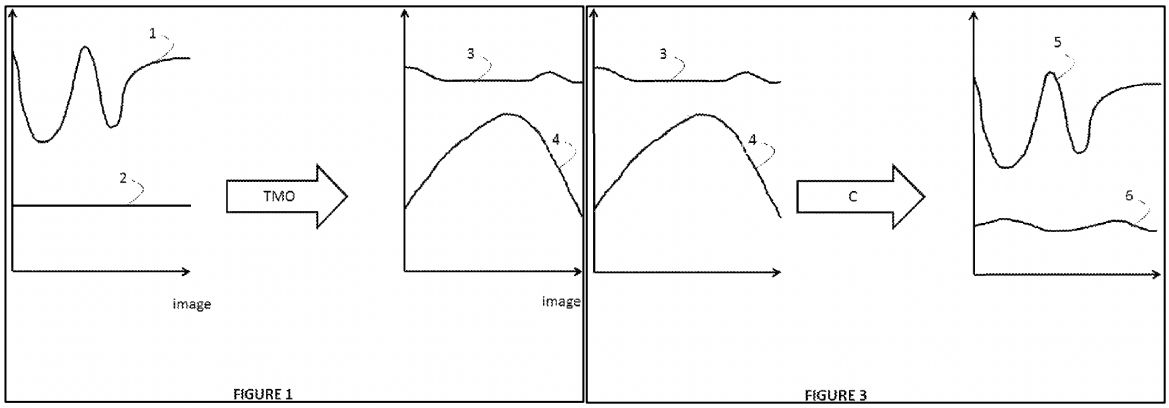
values belong to a lower dynamic range (LDR). Ex. 2 ('674 Patent) at 1:16-21. The invention addresses limitations in prior tone-mapping operators (TMOs), such as the commonly used Reinhard "Photographic Tone Reproduction" (PTR) operator, which operate on each image independently and therefore introduce visible temporal artifacts—particularly a "flickering effect [that is] visible in modified images." *Id*. at 1:40-2:40. The '674 Patent explains that this is because, "if the key k changes from one image to another, the conversion curve (of sigmoid form) also changes, which results in different conversions for luminance values nevertheless similar in the original images. A flickering effect is thus visible in the modified images." *Id*. at 2:21-25.

42. Prior attempts to mitigate these problems—such as applying low-pass filters to tone curves—failed to preserve visual consistency. *Id*. at 2:35-45, 3:1-8. As the patent notes, while such temporal filtering the conversion curve "deforms" the perceptual optimization, "causing a sub-optimal perception of the images of the image sequence thus modified." *Id*. at 3:3-8.

43. The invention introduces a new HDR-to-LDR conversion system that performs image-by-image dynamic-range conversion using any known TMO but adds a correction step to maintain perceptual and temporal coherence. Specifically, "the method is characterized in that it also comprises a step of correction of the dynamic range during which the dynamic range of the values of the luminance component thus modified is reduced by a value calculated from a global characteristic of the original image sequence." *Id*. at Abstract, 3:60-66.

44. Figure 3 (reproduced below) of the '674 Patent illustrates the improvement achieved by the claimed invention over the prior art (Figure 1). As shown in Figure 1 (reproduced below), prior tone-mapping approaches convert HDR image sequences into LDR values in a way that causes brightness instability across frames. The upper curve (3) shows that a constant-brightness object appears to fluctuate in luminance from frame to frame, while the lower curve (2)

remains steady—demonstrating that prior methods introduce visible flicker. In contrast, Figure 3 shows that after applying the claimed correction step, the upper curve (3) becomes stable, indicating consistent luminance for the object throughout the sequence, while curve (4) reflects a controlled compression of luminance values that preserves overall brightness and perceptual balance. As a result, the sequence exhibits coherent illumination from frame to frame, eliminating the flicker characteristic of prior systems.



45. These advances are reflected in the claims. Claim 1 recites applying a dynamic-range conversion operator to each image's luminance component and then "correcting the dynamic range of the values of the luminance component thus modified by reducing it by a value calculated from a global characteristic of the original image sequence." *Id*. at Claim 1.

46. In sum, the '674 Patent discloses concrete, computer-implemented improvements to dynamic-range conversion in video processing. By integrating global and local luminance statistics into the tone-mapping operation, the invention ensures perceptual stability, reduces flicker, and preserves brightness coherence across frames. A person of ordinary skill in the art would understand that the claimed invention's ordered combination of elements is inventive and that the specification demonstrates full possession of the claimed subject matter without undue experimentation.

The ’724 Patent

47. U.S. Patent No. 8,363,724 (“the ’724 Patent”), entitled “Methods and apparatus using virtual reference pictures,” issued on January 29, 2013 and names Yeping Su, Peng Yin, Purvin Bibhas Pandit, and Cristina Gomilaas the inventors. The ’724 Patent is attached as Exhibit 3.

48. InterDigital VC Holdings, Inc. owns all rights, title, and interest in the ’724 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

49. The ’724 Patent is valid and enforceable and directed to patentable subject matter.

50. The ’724 Patent by identifies limitations in prior art video compression systems such as AVC, which rely on previously reconstructed or decoded pictures as reference frames for motion estimation and compensation. Ex. 3 (’724 Patent) at 1:22-35. In multi-view video coding (MVC), reconstructed pictures from neighboring camera views may also be used as reference sources to exploit redundancy between perspectives through disparity estimation and compensation. *Id*. However, as the specification explains, prior systems depend exclusively on decoded pictures that have already been reconstructed for display, limiting the flexibility and potential accuracy of prediction. *See, e.g.*, *id*. at Abstract, 1:54-59.

51. To address these shortcomings, the patent introduces methods and apparatus that use and manage Virtual Reference Pictures (“VRPs”). These virtual pictures are created from decoded frames but are not required for display. *Id*. at 1:54-64. As the specification explains, the invention provides for “management of virtual reference pictures (VRP) in a video encoder and/or decoder,” with each VRP being “not required for display purposes” and usable for prediction purposes. *Id*. at 4:61-5:5.

52. Through these innovations, the patent extends traditional prediction models beyond

the limits of prior compression systems. By enabling the creation, signaling, storage, and controlled use of virtual reference pictures that are not tied to displayed frames, the invention provides a structured framework for leveraging synthetic or processed reference data. *See, e.g.*, Figs. 1-4. This results in improved compression efficiency and prediction quality relative to prior art methods that lacked any mechanism for managing such virtual references.

53. These technical advancements are reflected in the claims, which recite, for example, "wherein the at least one virtual reference picture is different than a previously decoded picture, and the at least one virtual reference picture is stored in a decoded picture buffer that also stores non-virtual reference pictures." *Id*. at Claims 39. The ordered combination of elements—metadata acquisition, comparison to display capabilities, and adaptive image conversion—constitutes a specific, technical solution to an identified problem in digital video systems. The specification demonstrates that the inventors possessed the claimed subject matter and enables one of ordinary skill to implement the invention without undue experimentation

The '855 Patent

54. U.S. Patent No. 8,681,855 ("the '855 Patent"), entitled "Method and apparatus for video encoding and decoding geometrically partitioned bi-predictive mode partitions," issued on March 25, 2014 and names Peng Yin and Oscar Divorra Escoda as the inventors. The '855 Patent is attached as Exhibit 4.

55. InterDigital VC Holdings, Inc. owns all rights, title, and interest in the '855 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

56. The '855 Patent is valid and enforceable and directed to patentable subject matter.

57. Conventional video coding standards such as ITU-T H.261, MPEG-1, MPEG-2, and MPEG-4 AVC (H.264) rely primarily on tree-structured macroblock partitioning. In these

approaches, a 16×16 macroblock may be divided into rectangular sub-partitions such as 16×8, 8×16, 8×8, and further down to 4×4. *See* Ex. 4 ('855 Patent) at 1:25-2:20. Each partition is predicted using forward or backward motion compensation from reference pictures, depending on whether the frame type is predictive (P-frame) or bi-predictive (B-frame). *Id*.

58. While this tree-based approach improves efficiency compared with earlier uniform block partitioning, it is limited because rectangular partitions cannot capture the geometric structure of two-dimensional video data. *Id*. at 2:42-35. Prior approaches introduced *geometric block partitioning*, where a block is divided by an arbitrary line or curve (a "wedge" partition). *Id*. at 2:35-3:10. However, those implementations were confined to predictive (P-frame) modes and were not extended to bi-predictive coding. *Id*. at 3:57-67.

59. The '855 invention overcomes these deficiencies by introducing adaptive geometric partitioning into the bi-predictive framework. *Id*. at 4:1-49. The disclosed encoder and decoder enable the use of geometric partitions in B-frames, allowing each region of a partitioned block to be predicted from forward, backward, or bi-directional reference lists. *Id*. at 10:1-24.

60. These technical advancements are reflected in the claims, which recite, for example, "decoding bi-predictable picture data for at least a portion of a picture using adaptive geometric partitioning." *Id*. at Claims 13. The claimed methods and structures improve the functioning of decoders. The ordered combination of elements constitutes a specific, technical solution to an identified problem in digital video systems. The specification demonstrates that the inventors possessed the claimed subject matter and enables one of ordinary skill to implement the invention without undue experimentation.

The '146 Patent

61. U.S. Patent No. 11,917,146 ("the '146 Patent"), entitled "Information processing device, information recording medium, and information processing method," issued on February

27, 2024 and names Tangi Poirier, Franck Galpin, and Fabrice Leleannec as the inventors. The ’146 Patent is attached as Exhibit 5.

62. InterDigital VC Holdings, Inc. owns all rights, title, and interest in the ’146 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

63. The ’146 Patent is valid and enforceable and directed to patentable subject matter.

64. Prior video coding standards such as HEVC and the Joint Exploration Model (“JEM”) employed rigid hierarchical structures that divided pictures into coding tree units (“CTUs”) and further into coding units (“CUs”), prediction units (“PUs”), and transform units (“TUs”). Ex. 5 (’146 Patent) at 1:20-2:55. While these schemes provided some compression efficiency, they were constrained by symmetric splitting patterns and required block sizes to conform to specific multiples of minimum coding block sizes. *Id*.

65. These limitations particularly affected blocks located along the boundaries of a picture, which could not be partitioned flexibly and thus were not coded efficiently. In HEVC and JEM, when a block extended beyond a picture’s edge, only a single fixed split mode—a quad-tree split—was allowed. This restriction caused degradation in reconstructed image quality and inefficiencies when encoding irregular frame dimensions, tiled picture structures, or 360-degree video layouts. *Id*. at 7:20-49. Because of these rigid restrictions, prior art encoders and decoders were unable to adapt to non-standard picture sizes or complex boundary conditions, leading to wasted bits and visible artifacts near picture borders. *Id*.

66. The ’146 Patent overcomes these deficiencies by introducing a flexible and adaptive decision framework for determining allowable split modes when a picture block extends beyond a boundary. *Id*. at Abstract. Instead of defaulting to a fixed quad-tree split, the disclosed

methods evaluate whether split lines are co-located with picture borders or whether the remaining block portion within the picture has dimensions that are a multiple of a minimum block size. *Id*. at Abstract, 7:20-49.

67. Based on this assessment, the encoder or decoder dynamically permits or restricts various split modes—including asymmetric and triple-split modes—while maintaining efficient signaling and consistent picture quality. *Id*. at 16:42-17:29. By allowing selective use of multiple split strategies, the invention provides enhanced rate-distortion performance and improved quality for boundary blocks.

68. These technical advancements are reflected in the claims, which recite, for example, "determine a current split mode to be applied to the current block in a set of split modes," "responsive to the current block extending beyond a single boundary of the picture, determining the current split mode comprises: decoding information to identify the current split mode in a plurality of split modes for which a split direction is parallel to a direction of the single boundary of the picture, wherein the information comprises a flag indicating a number of second blocks resulting from a decomposition of the current block according to the current split mode." *Id*. at Claims 7. The claimed methods and structures improve the functioning of AV1 encoding and decoding systems. The ordered combination of elements constitutes a specific, technical solution to an identified problem in digital video systems. The specification demonstrates that the inventors possessed the claimed subject matter and enables one of ordinary skill to implement the invention without undue experimentation.

COUNT I: INFRINGEMENT OF THE '211 PATENT

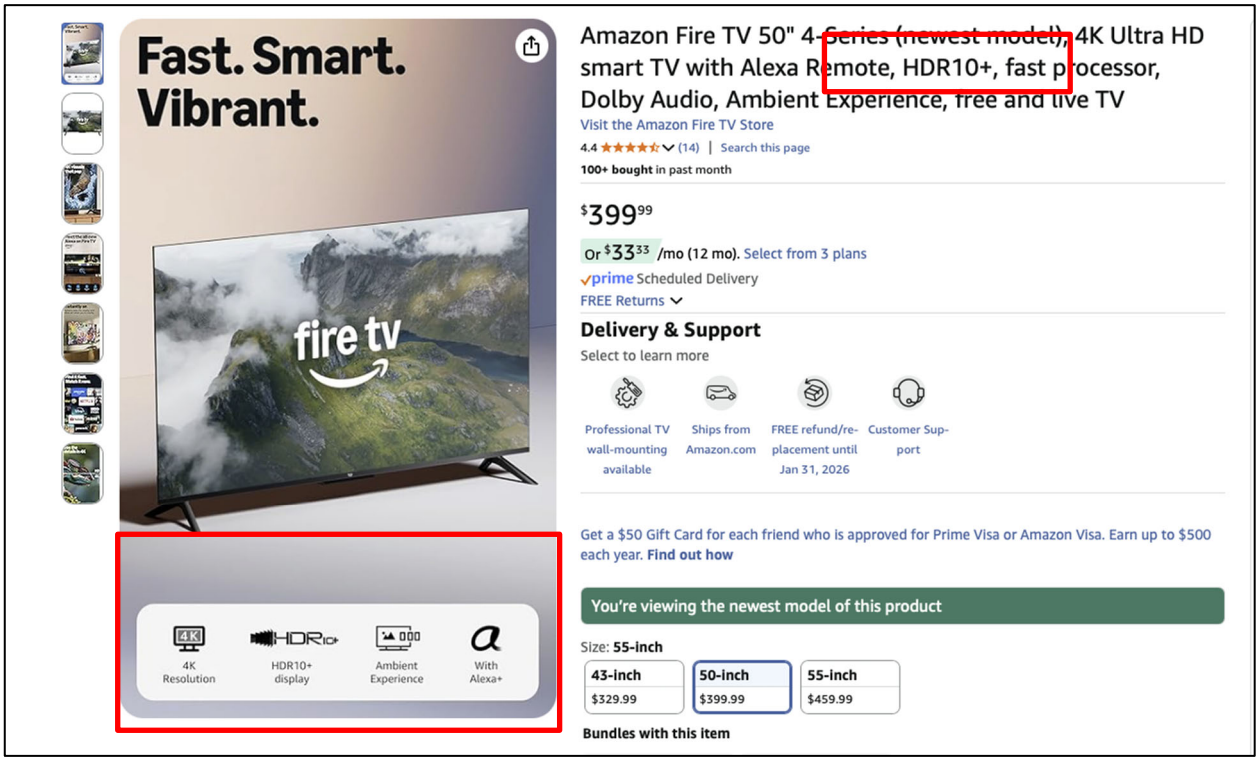
69. InterDigital incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

70. Amazon has infringed and continues to infringe, literally and/or under the doctrine

of equivalents, in violation of 35 U.S.C. § 271, by making, using, selling, and/or offering for sale in the United States or importing into the United States infringing products and/or services, including at least the HDR Accused Instrumentalities[4], and/or inducing others to do the same. Amazon derives revenue from the activities relating to the HDR Accused Instrumentalities.

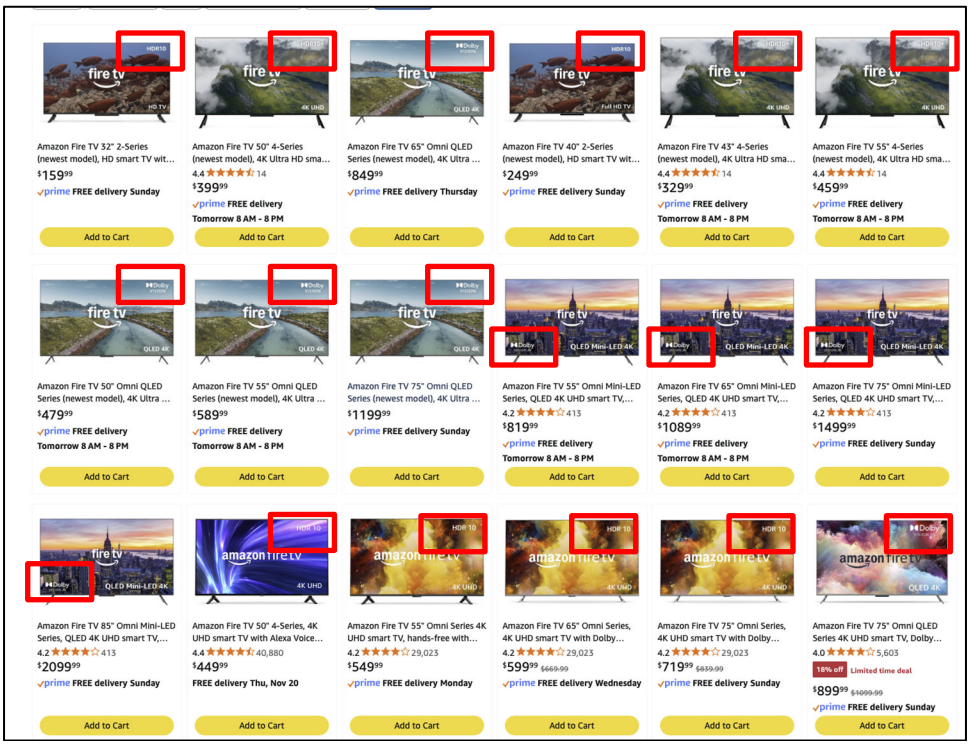
71. As illustrated in Exhibit 6, Amazon infringes at least Claims 1 and 12 of the ’211 Patent by enabling HDR playback on the HDR Accused Instrumentalities.

72. Amazon took the above actions intending to infringe and/or cause infringing acts by its users. For example, Amazon advertises its devices as playing back HDR content and provides instructions on how to play back HDR content.



Source: Amazon.com, *Amazon Fire TV 4-Series 55" 4K UHD Smart TV* (AMZN) (2025), available at https://www.amazon.com/dp/B0DFNTKTYN (last visited Nov. 7, 2025).

[4] HDR Accused Instrumentalities includes all Amazon devices capable of playing back HDR10, HDR10+, or Dolby Vision content including at least the following: Fire TV Stick HD, Fire TV Stick 4K Select, Fire TV Stick 4K Plus, Fire TV Stick 4K Max, Fire TV Cube, Fire TV 2-Series, Fire TV 4-Series, and Fire TV Omni Series.



Source: Amazon.com, *Fire TV Smart TV Buyer's Guide*, https://www.amazon.com/firetv/smart-tv-buyers-guide (last visited Nov. 7, 2025).

Find your Fire TV streaming device

DEVICE	Fire TV Stick HD	Fire TV Stick 4K Select	Fire TV Stick 4K Plus	Fire TV Stick 4K Max	Fire TV Cube
PRICE	$19.99 Limited time deal 43% off List Price: $34.99	$24.99 Ends in 11:52:15 38% off List Price: $39.99	$29.99 Ends in 11:52:15 40% off List Price: $49.99	$39.99 Limited time deal 33% off List Price: $59.99	$99.99 Limited time deal 29% off List Price: $139.99
RATINGS	4.7 (45,384)	3.5 (202)	4.7 (91,819)	4.6 (65,988)	4.5 (14,858)
BEST FOR	Full HD streaming	Essential 4K streaming	Cinematic 4K streaming	Powerful 4K streaming	The ultimate hands-free 4K streaming experience
SUPPORTED PICTURE QUALITY	1080p Full HD (High Definition)	4K Ultra HD	4K Ultra HD	4K Ultra HD	4K Ultra HD
SUPPORTED VIDEO	HDR10, HDR10+, HLG	HDR10, HDR10+, HLG	Dolby Vision, HDR10, HDR10+, HLG	Dolby Vision, HDR10, HDR10+, HLG	Dolby Vision, HDR10, HDR10+, HLG
SUPPORTED AUDIO	Dolby-encoded audio (HDMI pass-through)	Dolby-encoded audio (HDMI pass-through)	Dolby Atmos audio	Dolby Atmos audio	Dolby Atmos audio
INCLUDED REMOTE	Alexa Voice Remote	Alexa Voice Remote	Alexa Voice Remote	Alexa Voice Remote Enhanced	Alexa Voice Remote Enhanced
STORAGE	8GB	8GB	8GB	16GB	16GB
WIFI SUPPORT & CONNECTIVITY	Wi-Fi 5	Wi-Fi 5	Wi-Fi 6	Wi-Fi 6E	Wi-Fi 6E + Ethernet port
CLOUD GAMING	Amazon Luna	Coming Soon: Amazon Luna, Xbox Game Pass	Amazon Luna, Xbox Game Pass	Amazon Luna, Xbox Game Pass	Amazon Luna, Xbox Game Pass
LIVE VIEW PICTURE-IN-PICTURE			✓	✓	✓
WORKS WITH ALEXA+		Coming soon	✓	✓	✓
HANDS-FREE WITH ALEXA					✓
CONNECT & CONTROL YOUR DEVICES (CABLE BOX, GAME CONSOLE, WEBCAM, ETC.)					✓
FIRE TV AMBIENT EXPERIENCE				✓	

Source: Amazon, *Streaming Media Players*, https://www.amazon.com/firetv/streaming-media-players?ref_=MARS_NAVSTRIPE_desktop_bar_smp (last visited Nov. 6, 2025).

Dolby Vision or High Dynamic Range Not Working on Fire TV Smart TV

Check your cable connections and verify which video formats the content supports.

1. Check if the content supports Dolby Vision, 4K, or HDR.
2. If the content comes from a connected device:
   a. Connect the device with an HDMI cable.
   b. Restart the connected device.
   c. Set the source device to output Dolby Vision, 4K, or HDR.
   d. Go to **Settings** on your Fire TV Smart TV.
   e. Select **Display & Sounds**, and then select **Picture Settings**.
   f. Select the HDMI input that your device connects to, and then select **HDMI Input Mode**.
   g. Change the input mode to **Auto** or **Mode 2 (2.0)**.
3. Try to restart your Fire TV Smart TV:
   a. Go to **Settings** on your Fire TV Smart TV.
   b. Select **My Fire TV** or **Device & Software**.
   c. Select **Restart**.
4. Make sure that the app is up to date:
   a. Go to the **Appstore** and then search for the app.
   b. An option to update shows if there's an available update for the app.
5. Reset your Fire TV Smart TV:
   a. Go to **Settings** on your Fire TV Smart TV.
   b. Select **My Fire TV** or **Device & Software**.
   c. Select **Reset to Factory Defaults**.

Dolby Vision or High Dynamic Range Not Working on Fire TV Devices

To troubleshoot issues with Dolby Vision or High Dynamic Range (HDR), use the Audio and Video Diagnostics tool on your Fire TV device.

The Audio and Video Diagnostics tool checks the capabilities of connected HDMI devices like your TV, soundbar, or AV receiver. The tool tests your TV's maximum resolution and refresh rate, HDR, and Dolby Vision support. It also detects support for various surround sound standards.

Note: The Audio and Video Diagnostics tool isn't available on all Fire TV devices.

1. Check that your equipment supports Dolby Vision or High Dynamic Range (HDR). To check supported audio settings, use the Audio and Video Diagnostics tool:
   a. Go to **Settings** on your Fire TV device.
   b. Select **Display & Sounds**
   c. Select **Audio/Video Diagnostics**.
2. If your TV supports HDR, but the content you're streaming is in a different format:
   a. Confirm that your TV supports Dolby Vision or HDR formats by using the test video at the bottom of the page.
   b. Check that the content supports HDR.
   c. Go to your TV's picture or input settings and check that the resolution is 4K, HDR, or FHD. Follow the manufacturer's instructions if needed.
3. If the Audio/Video Diagnostics tool doesn't detect the format that you want to use, check your current equipment setup:
   a. Make sure that your TV supports Dolby Vision or HDR. If you're connecting your Fire TV device to an AV Receiver or soundbar, make sure it's able to pass-through Dolby Vision or HDR formats.
   b. Sometimes your Fire TV device streams at 1080p 60 Hz for smoother playback if you have a 4K 30 Hz Dolby Vision TV. To set your resolution to 4K 60 Hz, go to **Settings** on your Fire TV device and then **Display & Sounds**.

For more help, go to:

Dolby Vision or High Dynamic Range Not Working on Fire TV Smart TV

Source: Amazon, *Help & Customer Service*, https://www.amazon.com/gp/help/customer/display.html?ref_=hp_gcs_csd_d2_000_1_TyJkIVATkXXwoG2FB5_DwH7z15n4q&nodeId=TyJkIVATkXXwoG2FB5&qid=1762459769899&sr=1(left); Amazon, *Help & Customer Service*, https://www.amazon.com/gp/help/customer/display.html?ref_=hp_gcs_csd_d2_000_2_G8GNX2B27JG726AH_DwH7z15n4q&nodeId=G8GNX2B27JG726AH&qid=1762459769899&sr=2 (right) (last visited Nov. 6, 2025).

73. Amazon has been aware of the ’211 Patent and its infringement thereof at least as of the filing of this Complaint.

74. On information and belief, Amazon also actively, knowingly, and intentionally induces infringement of one or more claims of the ’211 Patent under 35 U.S.C. § 271(b) by actively encouraging others to make, use, sell, offer to sell, and/or import in the United States, the HDR Accused Instrumentalities.

75. Amazon’s acts of infringement have caused damage to InterDigital. InterDigital is entitled to recover from Amazon the damages sustained by InterDigital as a result of its wrongful

acts in an amount subject to proof at trial.

76. InterDigital provides the foregoing explanation of infringement with regard to an exemplary claim compared to exemplary functionality. InterDigital reserves the right to present additional or alternative explanations of infringement for the claim and functionalities identified below and for other claims and functionalities of the services.

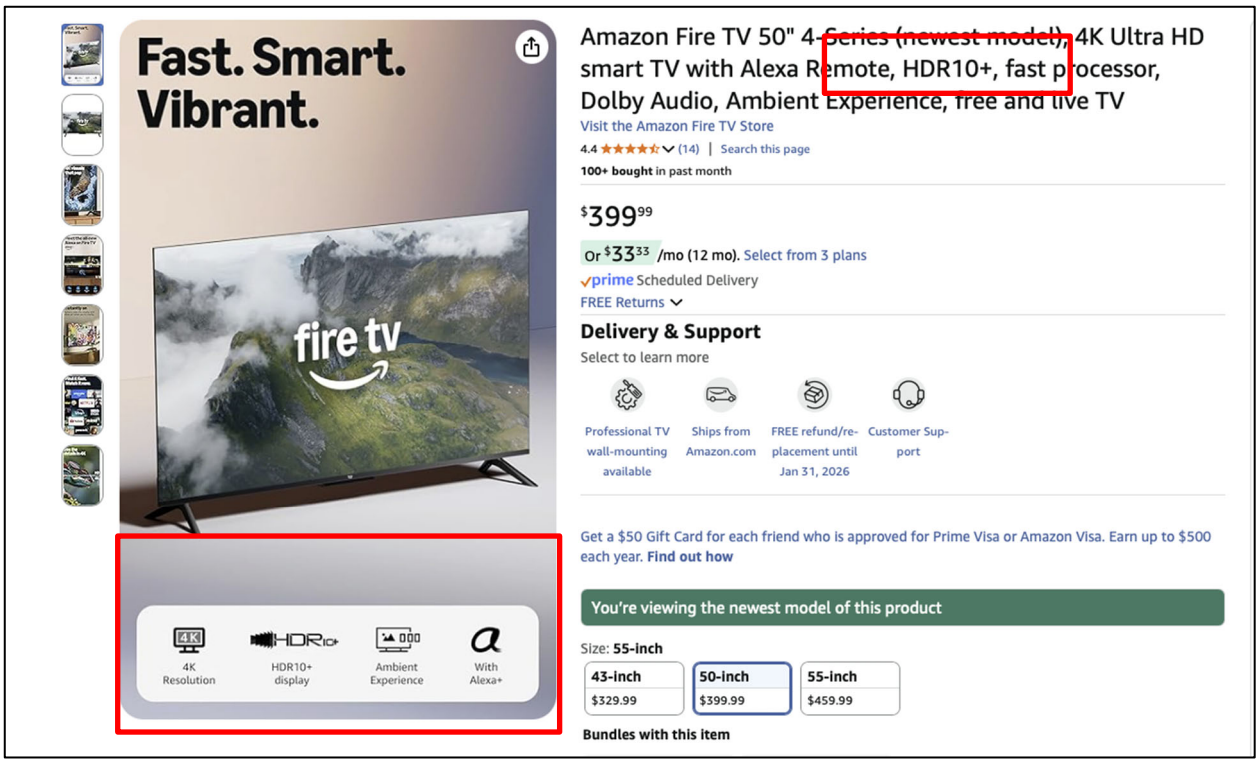
COUNT II: INFRINGEMENT OF THE '674 PATENT

77. InterDigital incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

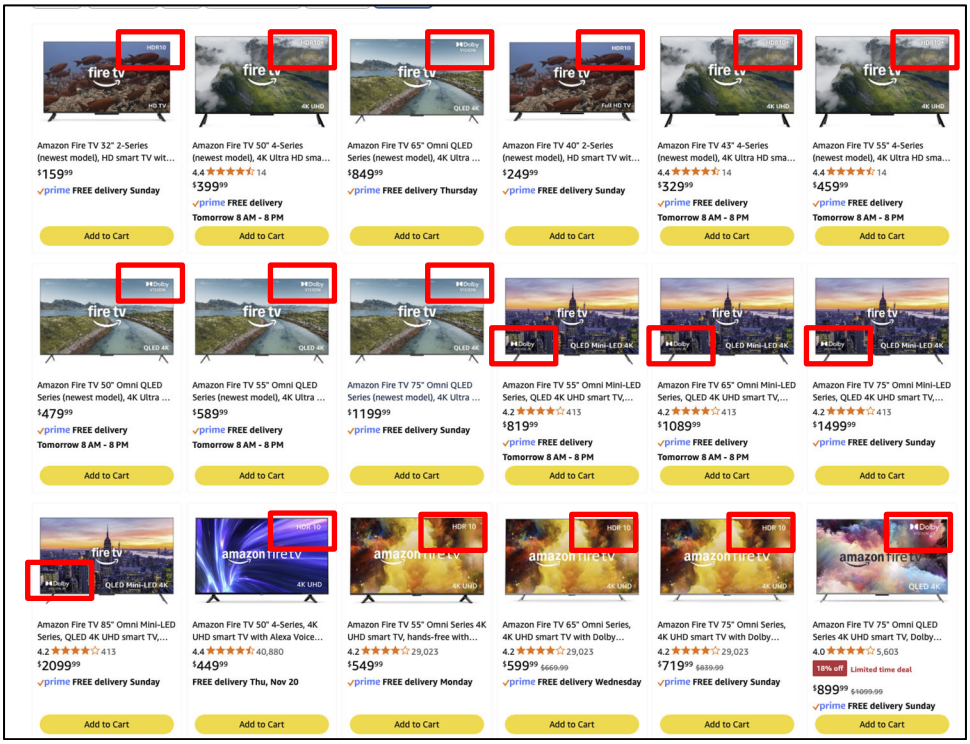
78. Amazon has infringed and continues to infringe the '674 Patent, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271, by making, using, selling, and/or offering for sale in the United States or importing into the United States infringing products and/or services, including at least the HDR Accused Instrumentalities, and/or inducing others to do the same. Amazon derives revenue from the activities relating to the HDR Accused Instrumentalities.

79. As illustrated in Exhibit 7, Amazon infringes at least Claims 1 and 10 of the '674 Patent by enabling HDR playback on the HDR Accused Instrumentalities.

80. Amazon took the above actions intending to infringe and/or cause infringing acts by its users. For example, Amazon advertises its devices as playing back HDR content and provides instructions on how to play back HDR content.



Source: Amazon.com, *Amazon Fire TV 4-Series 55" 4K UHD Smart TV* (AMZN) (2025), available at https://www.amazon.com/dp/B0DFNTKTYN (last visited Nov. 7, 2025).



Source: Amazon.com, *Fire TV Smart TV Buyer's Guide*, https://www.amazon.com/firetv/smart-tv-buyers-

guide (last visited Nov. 7, 2025).

Find your Fire TV streaming device

DEVICE	Fire TV Stick HD	Fire TV Stick 4K Select	Fire TV Stick 4K Plus	Fire TV Stick 4K Max	Fire TV Cube
PRICE	$19.99 Limited time deal 43% off List Price: ~~$34.99~~	$24.99 Ends in 11:52:15 38% off List Price: ~~$39.99~~	$29.99 Ends in 11:52:15 40% off List Price: ~~$49.99~~	$39.99 Limited time deal 33% off List Price: ~~$59.99~~	$99.99 Limited time deal 29% off List Price: ~~$139.99~~
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BEST FOR	Full HD streaming	Essential 4K streaming	Cinematic 4K streaming	Powerful 4K streaming	The ultimate hands-free 4K streaming experience
SUPPORTED PICTURE QUALITY	1080p Full HD (High Definition)	4K Ultra HD	4K Ultra HD	4K Ultra HD	4K Ultra HD
SUPPORTED VIDEO	HDR10, HDR10+, HLG	HDR10, HDR10+, HLG	Dolby Vision, HDR10, HDR10+, HLG	Dolby Vision, HDR10, HDR10+, HLG	Dolby Vision, HDR10, HDR10+, HLG
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STORAGE	8GB	8GB	8GB	16GB	16GB
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LIVE VIEW PICTURE-IN-PICTURE			✓	✓	✓
WORKS WITH ALEXA+		Coming soon	✓	✓	✓
HANDS-FREE WITH ALEXA					✓
CONNECT & CONTROL YOUR DEVICES (CABLE BOX, GAME CONSOLE, WEBCAM, ETC.)					✓
FIRE TV AMBIENT EXPERIENCE				✓	

Source: Amazon, *Streaming Media Players*, https://www.amazon.com/firetv/streaming-media-players?ref_=MARS_NAVSTRIPE_desktop_bar_smp (last visited Nov. 6, 2025).

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   c. Select **Audio/Video Diagnostics**.
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3. If the Audio/Video Diagnostics tool doesn't detect the format that you want to use, check your current equipment setup:
   a. Make sure that your TV supports Dolby Vision or HDR. If you're connecting your Fire TV device to an AV Receiver or soundbar, make sure it's able to pass-through Dolby Vision or HDR formats.
   b. Sometimes your Fire TV device streams at 1080p 60 Hz for smoother playback if you have a 4K 30 Hz Dolby Vision TV. To set your resolution to 4K 60 Hz, go to **Settings** on your Fire TV device and then **Display & Sounds**.

For more help, go to:

Dolby Vision or High Dynamic Range Not Working on Fire TV Smart TV

Source: Amazon, *Help & Customer Service*, https://www.amazon.com/gp/help/customer/display.html?ref_=hp_gcs_csd_d2_000_1_TyJkIVATkXXwoG2FB5_DwH7z15n4q&nodeId=TyJkIVATkXXwoG2FB5&qid=1762459769899&sr=1(left); Amazon, *Help & Customer Service*, https://www.amazon.com/gp/help/customer/display.html?ref_=hp_gcs_csd_d2_000_2_G8GNX2B27JG726AH_DwH7z15n4q&nodeId=G8GNX2B27JG726AH&qid=1762459769899&sr=2 (right) (last visited Nov. 6, 2025).

81. Amazon has been aware of the ’674 Patent and its infringement thereof at least as of the filing of this Complaint.

82. On information and belief, Amazon also actively, knowingly, and intentionally induces infringement of one or more claims of the ’674 Patent under 35 U.S.C. § 271(b) by actively encouraging others to make, use, sell, offer to sell, and/or import in the United States, the HDR Accused Instrumentalities.

83. Amazon’s acts of infringement have caused damage to InterDigital. InterDigital is entitled to recover from Amazon the damages sustained by InterDigital as a result of its wrongful

acts in an amount subject to proof at trial.

84. InterDigital provides the foregoing explanation of infringement with regard to an exemplary claim compared to exemplary functionality. InterDigital reserves the right to present additional or alternative explanations of infringement for the claim and functionalities identified below and for other claims and functionalities of the services.

COUNT III: INFRINGEMENT OF THE '724 PATENT

85. InterDigital incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

86. Amazon has infringed and continues to infringe the '724 Patent, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271, by making, using, selling, and/or offering for sale in the United States or importing into the United States infringing products and/or services, including at least the AV1/VP9 Accused Instrumentalities,[5] and/or inducing others to do the same. Amazon derives revenue from the activities relating to the AV1/VP9 Accused Instrumentalities.

87. As illustrated in Exhibit 8, Amazon infringes at least Claim 39 of the '724 Patent, by enabling AV1/VP9 decoding on the AV1/VP9 Accused Instrumentalities.

88. Amazon took the above actions intending to infringe and/or cause infringing acts by others. For example, Amazon advertises its devices as being able to decode and playback AV1/VP9 content.

[5] AV1/VP9 Accused Instrumentalities include all Amazon devices capable of decoding AV1 or VP9 content including at least the following: Fire Stick 4K, Fire TV Stick 4K Max, Fire TV Stick 4K Plus, Fire TV Cube, Fire TV 2-Seires, Fire TV 4-Series, Fire Max 11, Echo Show 15, Echo Show 21.

Content formats supported	Video: Dolby Vision, HDR 10, HDR10+, HLG, H.265, H.264, VP9, AV1; Audio: xHE-AAC, AAC-LC, AAC+, eAAC+, AAC-ELD, MP3, AMR-NB, FLAC, PCM/WAV, Vorbis, Dolby AC3, eAC3 (Dolby Digital Plus), Dolby Atmos (EC3_JOC), Dolby AC4, Dolby MAT, Dolby TrueHD pass-through, MPEG-H pass-through, DTS passthrough, DTS-HD passthrough (basic profile); Photo: JPEG, PNG, GIF, BMP

Source: Amazon, *Amazon Fire TV Stick* 4K Plus (newest model), https://www.amazon.com/dp/B0F7Z4QZTT?ref=amzdv_ucc_dp_lod__B0F7Z4QZTT&th=1 (last visited Nov. 6, 2025).

VIDEO CODECS		
	H.263	D (HW) baseline, 1080P@60fps
	H.264 AVC	D (HW) Constrained Baseline, Main Profile, High profile, L5.0 1080p@60FPS (secure) / 2K@60FPS (non-secure), E (HW)
	H.265 HEVC	D(HW) Main Profile, L5.0 1080p@60FPS (secure) / 2K@60FPS (non-secure)
	MPEG2	D (HW) Main Profile @High 1080P@60FPS
	MPEG4	D (HW) Advanced Simple Profile@L5, Simple Profile@L6 1080P@60FPS
	VP8	D (HW)
	VP9	D (HW) Profile 0/2 1080P@60FPS (secure) / 2K@60FPS (non-secure)
	AV1 with film grain	Supported
	VC-1	Not supported

Source: Amazon Developer, *Fire Tablet Specifications: Fire HD Models*, Amazon Developer Documentation (visited Nov. 7, 2025), https://developer.amazon.com/docs/device-specs/ft-device-specifications-firehd-models.html?v=fire11max_2023.

Video codecs	• **AV1**: Hardware accelerated up to 1080p @ 60fps, 20 Mbps, Main Profile Level 4.1 • **H.265 (HEVC) (High Efficiency Video Coding)**: Hardware accelerated up to 1080p @ 60fps, 20 Mbps, Main Profile Level 4.1 • **H.264**: Hardware accelerated up to 1080p @ 60fps, or 720p @ 60fps, 20 Mbps, High Profile up to Level 4 • **H.263**: Supported up to 1080p @ 30fps, 6 Mbps, Profile 0 Level 70 • **VP9**: Hardware accelerated up to 1080p @ 60fps, Profile 2 up to 20 Mbps • **VP8**: Supported up to 1080p 30fps. Baseline profile, non-secure • **MPEG-4**: Hardware accelerated up to 1080p @ 60fps • **MPEG-2**: Hardware accelerated up to 1080p @ 60fps

Source: Amazon Developer, *Device Specifications: Echo Show*, Amazon Developer Documentation (visited Nov. 7, 2025), https://developer.amazon.com/docs/device-specs/device-specifications-echo-show.html

89. Amazon has been aware of the ’724 Patent and its infringement thereof at least as of the filing of this Complaint.

90. On information and belief, Amazon also actively, knowingly, and intentionally induces infringement of one or more claims of the ’724 Patent under 35 U.S.C. § 271(b) by actively encouraging others to make, use, sell, offer to sell, and/or import in the United States, the AV1/VP9 Accused Instrumentalities.

91. Amazon’s acts of infringement have caused damage to InterDigital. InterDigital is

entitled to recover from Amazon the damages sustained by InterDigital as a result of its wrongful acts in an amount subject to proof at trial.

92. InterDigital provides the foregoing explanation of infringement with regard to an exemplary claim compared to exemplary functionality. InterDigital reserves the right to present additional or alternative explanations of infringement for the claim and functionalities identified below and for other claims and functionalities of the services.

COUNT IV: INFRINGEMENT OF THE ’855 PATENT

93. InterDigital incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

94. Amazon has infringed and continues to infringe the ’855 Patent, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271, by making, using, selling, and/or offering for sale in the United States or importing into the United States infringing products and/or services, including at least the AV1 Accused Instrumentalities, and/or inducing others to do the same. Amazon derives revenue from the activities relating to the AV1 Accused Instrumentalities.

95. As illustrated in Exhibit 9, Amazon infringes at least Claim 13 of the ’855 Patent by enabling AV1 decoding on the AV1 Accused Instrumentalities.

96. Amazon took the above actions intending to infringe and/or cause infringing acts by others. For example, Amazon advertises its devices as being able to decode and playback AV1 content.

Content formats supported	Video: Dolby Vision, HDR 10, HDR10+, HLG, H.265, H.264, VP9, AV1; Audio: xHE-AAC, AAC-LC, AAC+, eAAC+, AAC-ELD, MP3, AMR-NB, FLAC, PCM/WAV, Vorbis, Dolby AC3, eAC3 (Dolby Digital Plus), Dolby Atmos (EC3_JOC), Dolby AC4, Dolby MAT, Dolby TrueHD pass-through, MPEG-H pass-through, DTS passthrough, DTS-HD passthrough (basic profile); Photo: JPEG, PNG, GIF, BMP

Source: Amazon, *Amazon Fire TV Stick 4K* Plus (newest model), https://www.amazon.com/dp/B0F7Z4QZTT?ref=amzdv_ucc_dp_lod__B0F7Z4QZTT&th=1

(last visited Nov. 6, 2025).

VIDEO CODECS		
	H.263	D (HW) baseline, 1080P@60fps
	H.264 AVC	D (HW) Constrained Baseline, Main Profile, High profile, L5.0 1080p@60FPS (secure) / 2K@60FPS (non-secure), E (HW)
	H.265 HEVC	D(HW) Main Profile, L5.0 1080p@60FPS (secure) / 2K@60FPS (non-secure)
	MPEG2	D (HW) Main Profile @High 1080P@60FPS
	MPEG4	D (HW) Advanced Simple Profile@L5, Simple Profile@L6 1080P@60FPS
	VP8	D (HW)
	VP9	D (HW) Profile 0/2 1080P@60FPS (secure) / 2K@60FPS (non-secure)
	AV1 with film grain	Supported
	VC-1	Not supported

Source: Amazon Developer, *Fire Tablet Specifications: Fire HD Models*, Amazon Developer Documentation (visited Nov. 7, 2025), https://developer.amazon.com/docs/device-specs/ft-device-specifications-firehd-models.html?v=fire11max_2023.

Video codecs	
	• **AV1**: Hardware accelerated up to 1080p @ 60fps, 20 Mbps, Main Profile Level 4.1 • **H.265 (HEVC) (High Efficiency Video Coding)**: Hardware accelerated up to 1080p @ 60fps, 20 Mbps, Main Profile Level 4.1 • **H.264**: Hardware accelerated up to 1080p @ 60fps, or 720p @ 60fps, 20 Mbps, High Profile up to Level 4 • **H.263**: Supported up to 1080p @ 30fps, 6 Mbps, Profile 0 Level 70 • **VP9**: Hardware accelerated up to 1080p @ 60fps, Profile 2 up to 20 Mbps • **VP8**: Supported up to 1080p 30fps. Baseline profile, non-secure • **MPEG-4**: Hardware accelerated up to 1080p @ 60fps • **MPEG-2**: Hardware accelerated up to 1080p @ 60fps

Source: Amazon Developer, *Device Specifications: Echo Show*, Amazon Developer Documentation (visited Nov. 7, 2025), https://developer.amazon.com/docs/device-specs/device-specifications-echo-show.html

97. Amazon has been aware of the ’855 Patent and its infringement thereof at least as of the filing of this Complaint.

98. On information and belief, Amazon also actively, knowingly, and intentionally induces infringement of one or more claims of the ’855 Patent under 35 U.S.C. § 271(b) by actively encouraging others to make, use, sell, offer to sell, and/or import in the United States, the AV1 Accused Instrumentalities.

99. Amazon’s acts of infringement have caused damage to InterDigital. InterDigital is entitled to recover from Amazon the damages sustained by InterDigital as a result of its wrongful acts in an amount subject to proof at trial.

100. InterDigital provides the foregoing explanation of infringement with regard to an exemplary claim compared to exemplary functionality. InterDigital reserves the right to present

additional or alternative explanations of infringement for the claim and functionalities identified below and for other claims and functionalities of the services.

COUNT V: INFRINGEMENT OF THE ’146 PATENT

101. InterDigital incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

102. Amazon has infringed and continues to infringe the ’146 Patent, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271, by making, using, selling, and/or offering for sale in the United States or importing into the United States infringing products and/or services, including at least the AV1 Accused Instrumentalities, and/or inducing others to do the same. Amazon derives revenue from the activities relating to the AV1 Accused Instrumentalities.

103. As illustrated in Exhibit 10, Amazon infringes at least Claim 7 of the ’146 Patent by enabling AV1 decoding on the AV1 Accused Instrumentalities.

104. Amazon took the above actions intending to infringe and/or cause infringing acts by others. For example, Amazon advertises its devices as being able to decode and playback AV1 content.

Content formats supported	Video: Dolby Vision, HDR 10, HDR10+, HLG, H.265, H.264, VP9, AV1; Audio: xHE-AAC, AAC-LC, AAC+, eAAC+, AAC-ELD, MP3, AMR-NB, FLAC, PCM/WAV, Vorbis, Dolby AC3, eAC3 (Dolby Digital Plus), Dolby Atmos (EC3_JOC), Dolby AC4, Dolby MAT, Dolby TrueHD pass-through, MPEG-H pass-through, DTS passthrough, DTS-HD passthrough (basic profile); Photo: JPEG, PNG, GIF, BMP

Source: Amazon, *Amazon Fire TV Stick 4K* Plus (newest model), https://www.amazon.com/dp/B0F7Z4QZTT?ref=amzdv_ucc_dp_lod__B0F7Z4QZTT&th=1 (last visited Nov. 6, 2025).

VIDEO CODECS		
	H.263	D (HW) baseline, 1080P@60fps
	H.264 AVC	D (HW) Constrained Baseline, Main Profile, High profile, L5.0 1080p@60FPS (secure) / 2K@60FPS (non-secure), E (HW)
	H.265 HEVC	D(HW) Main Profile, L5.0 1080p@60FPS (secure) / 2K@60FPS (non-secure)
	MPEG2	D (HW) Main Profile @High 1080P@60FPS
	MPEG4	D (HW) Advanced Simple Profile@L5, Simple Profile@L6 1080P@60FPS
	VP8	D (HW)
	VP9	D (HW) Profile 0/2 1080P@60FPS (secure) / 2K@60FPS (non-secure)
	AV1 with film grain	Supported
	VC-1	Not supported

Source: Amazon Developer, *Fire Tablet Specifications: Fire HD Models*, Amazon Developer Documentation (visited Nov. 7, 2025), https://developer.amazon.com/docs/device-specs/ft-device-specifications-firehd-models.html?v=fire11max_2023.

Video codecs	• **AV1**: Hardware accelerated up to 1080p @ 60fps, 20 Mbps, Main Profile Level 4.1 • **H.265 (HEVC) (High Efficiency Video Coding)**: Hardware accelerated up to 1080p @ 60fps, 20 Mbps, Main Profile Level 4.1 • **H.264**: Hardware accelerated up to 1080p @ 60fps, or 720p @ 60fps, 20 Mbps, High Profile up to Level 4 • **H.263**: Supported up to 1080p @ 30fps, 6 Mbps, Profile 0 Level 70 • **VP9**: Hardware accelerated up to 1080p @ 60fps, Profile 2 up to 20 Mbps • **VP8**: Supported up to 1080p 30fps. Baseline profile, non-secure • **MPEG-4**: Hardware accelerated up to 1080p @ 60fps • **MPEG-2**: Hardware accelerated up to 1080p @ 60fps

Source: Amazon Developer, *Device Specifications: Echo Show*, Amazon Developer Documentation (visited Nov. 7, 2025), https://developer.amazon.com/docs/device-specs/device-specifications-echo-show.html

105. Amazon has been aware of the ’146 Patent and its infringement thereof at least as of the filing of this Complaint.

106. On information and belief, Amazon also actively, knowingly, and intentionally induces infringement of one or more claims of the ’146 Patent under 35 U.S.C. § 271(b) by actively encouraging others to make, use, sell, offer to sell, and/or import in the United States, the AV1 Accused Instrumentalities.

107. Amazon’s acts of infringement have caused damage to InterDigital. InterDigital is entitled to recover from Amazon the damages sustained by InterDigital as a result of its wrongful acts in an amount subject to proof at trial.

108. InterDigital provides the foregoing explanation of infringement with regard to an exemplary claim compared to exemplary functionality. InterDigital reserves the right to present additional or alternative explanations of infringement for the claim and functionalities identified

below and for other claims and functionalities of the services.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a trial by jury of any and all issues triable.

PRAYER FOR RELIEF

WHEREFORE, InterDigital asks this Court for an order granting the following relief:

A. A judgment in favor of InterDigital that Amazon has infringed, either literally and/or under the doctrine of equivalents, the ’211, ’674, ’724, ’855, and ’146 Patents;

B. A judgment and order finding that Amazon’s infringement has been willful;

C. A permanent injunction prohibiting Amazon from further acts of infringement;

D. An order awarding damages sufficient to compensate InterDigital for Amazon’s infringement of the Asserted Patents, but in no event less than a reasonable royalty, including supplemental damages post-verdict, together with pre-judgment and post-judgment interest and costs;

E. Enhanced damages pursuant to 35 U.S.C. § 284;

F. A judgment and order declaring that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding Plaintiffs their reasonable attorneys’ fees against Defendant; and

G. Any and all other relief as the Court may deem appropriate and just under the circumstances.

Dated: November 7, 2025

Respectfully submitted,

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