

Exhibit C

Valve's Accused Handheld Instrumentalities infringe the following asserted claims of U.S. Patent No.9,430,042 to Levin (the "'042 Patent") in at least the following exemplary ways. To the extent that the cited documentation relating to Valve's Accused Handheld Instrumentalities does not disclose all features, methods or operations required by the asserted claims, such non-disclosed features, methods or operations are inherently or equivalently practiced. Immersion's preliminary infringement contentions are based on information presently available to Immersion. Based upon that information, Valve's deployment, operation, maintenance, testing, use, sale, and importation of the Accused Instrumentalities as described below infringes one or more claims of the '042 Patent either literally or under the doctrine of equivalents. Immersion reserves the right to provide further details regarding Valve's infringement, whether that infringement is literal or under the doctrine of equivalents, as discovery is provided by Valve, and to the fullest extent permissible under the Federal and Local Rules, and any Order of this Court. The specific components, systems, and constructs identified in this chart are for exemplary purposes only and Immersion reserves all rights to supplement as additional components, systems, and constructs become known through discovery, as well as after Valve produces documents and source code and/or the Court construes any terms from the claims of the '042 Patent.

For example, Valve provides guides for developing games and applications with the Unreal, Unity, and Source engines for the Accused Handheld Instrumentalities, which are subject to Valve's control and used for Valve's benefit. In addition, certain developers may develop games and applications with different engines that nonetheless must interoperate with the Accused Handheld Instrumentalities and are subject to Valve's control and used for Valve's benefit. Regardless of which engine is deployed, the Accused Handheld Instrumentalities infringe the asserted claims, as identified in the examples below.

Valve directly infringes the claims of the '042 Patent in the exemplary ways detailed below. Valve indirectly infringes the claims of the '042 Patent to the extent Valve's users are direct infringers of the claims of the '042 Patent as referenced below, and their acts of direct infringement are use of the Accused Handheld Instrumentalities in an infringing manner as described below. With knowledge of infringement of the claims of the '042 Patent going back to at least the filing of the Complaint in this matter, Valve has taken and continues to take active steps to induce infringement of the claims of the '042 Patent by its users. Such active steps include, but are not limited to, making and selling the Accused Handheld Instrumentalities, encouraging third parties to develop infringing features for the Accused Handheld Instrumentalities, providing its users with instructions on use of the accused features of Accused Handheld Instrumentalities.

In addition, Valve infringes by supplying or causing to be supplied in or from the United States all or a substantial portion of the components of the Accused Handheld Instrumentalities, including software, in such manner as to actively induce the combination of

such components outside of the United States in a manner that would infringe the patent if such combination occurred within the United States. Valve further also causes to be supplied in or from the United States components of the Accused Handheld Instrumentalities especially made for use in the Accused Handheld Instrumentalities, including without limitation software, that are not staple articles of commerce suitable for substantial noninfringing use, knowing that such component is so made or adapted and intending that such component will be combined outside of the United States in a manner that would infringe the patent if such combination occurred within the United States.

Claim 1	Valve's Accused Instrumentalities
1[P] A method comprising:	To the extent the preamble is determined to be limiting, Valve's Accused Handheld Instrumentalities perform the claimed steps as explained below.
1[A] receiving an input signal comprising information associated with a manipulation of an input device configured to control a plurality of systems, where in the input device comprises a touch-pad;	Valve's Accused Handheld Instrumentalities receive an input signal comprising information associated with a manipulation of an input device configured to control a plurality of systems, wherein the input device comprises a touch-pad. For example, Valve provides the Steam Input API, which is a flexible action-based API that supports all major controller types.¹ This API includes member functions that trigger a low-level haptic pulse on supported controllers.² For example, the Steam Deck includes multiple exemplary systems, including the various modes, games, and menu navigations that can be controlled with a touch-pad. As just one example, the Steam Deck can be run in two modes: Gaming Mode and Desktop Mode.³ When turned on, the Steam Deck runs in Gaming Mode, a state dedicated to gaming, where users can play the games they have purchased. In Desktop Mode, users can use the Deck as a PC, such as by browsing the internet and playing games on Steam.⁴ Further, the Steam Deck includes multiple touch-pads, including the right and left trackpads:⁵

¹ See <https://partner.steamgames.com/doc/api/isteaminput> (last accessed May 10, 2023).

² See <https://partner.steamgames.com/doc/api/isteaminput#functions> (last accessed May 10, 2023).

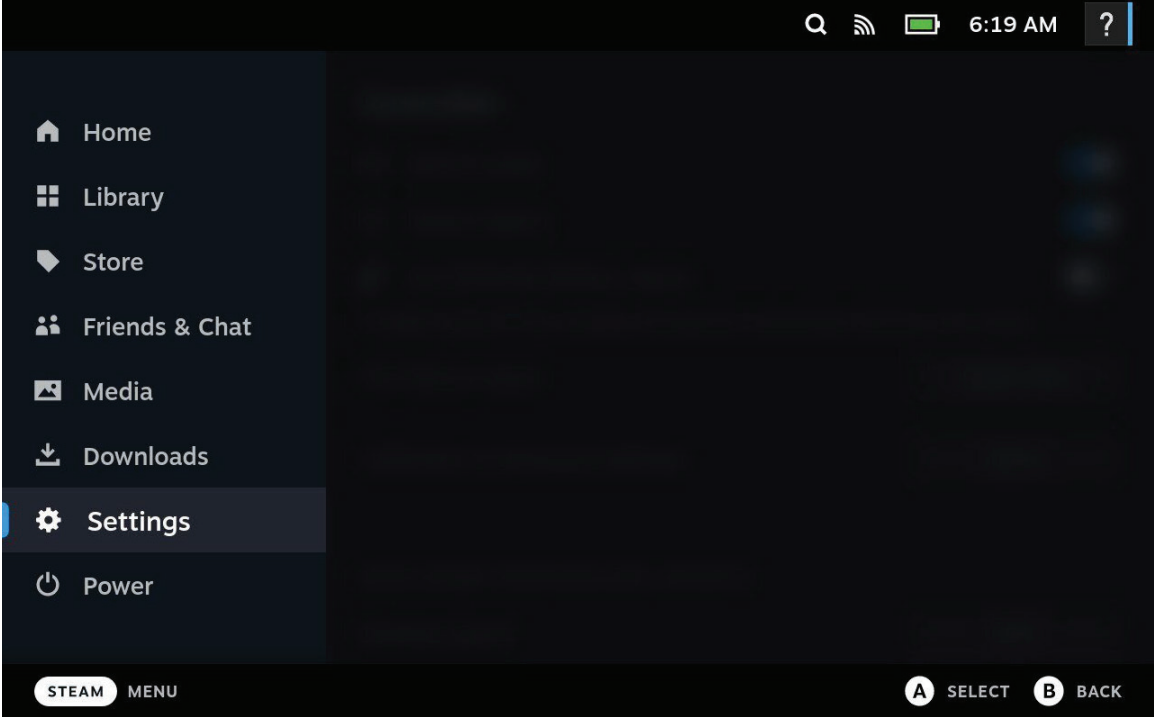
³ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

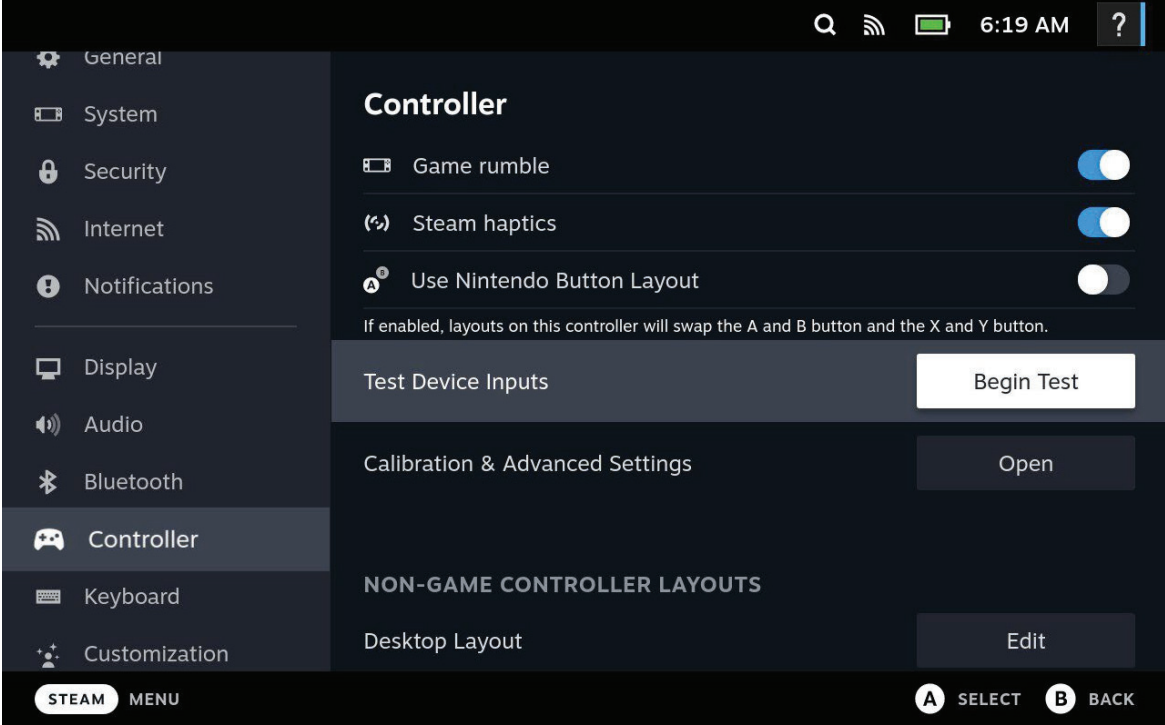
⁴ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

⁵ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

Claim 1	Valve's Accused Instrumentalities
	Released by Valve in 2022, the Steam Deck is a handheld gaming PC that is designed to play all sorts of video games on the go. Along with being equipped with the processing power to play games at a satisfying visual fidelity, its controls include not only those found on a standard gamepad but also has a gyro, two trackpads, four grip buttons, and a multitouch touchscreen. This richness in input helps enable the Steam Deck to play games designed for gamepad, keyboard & mouse, and touch input across all types of genres.  Further, pressing the Steam button brings up a list of menu items for navigating to other parts of Steam:⁶

⁶ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

Claim 1	Valve's Accused Instrumentalities
	 For example, this menu allows users to “Test Device Inputs”:

Claim 1	Valve's Accused Instrumentalities
	 The resulting interface shows the “Left Trackpad” location and “Left Trackpad Click Pressure,” where the trackpads are examples of touch-pads:

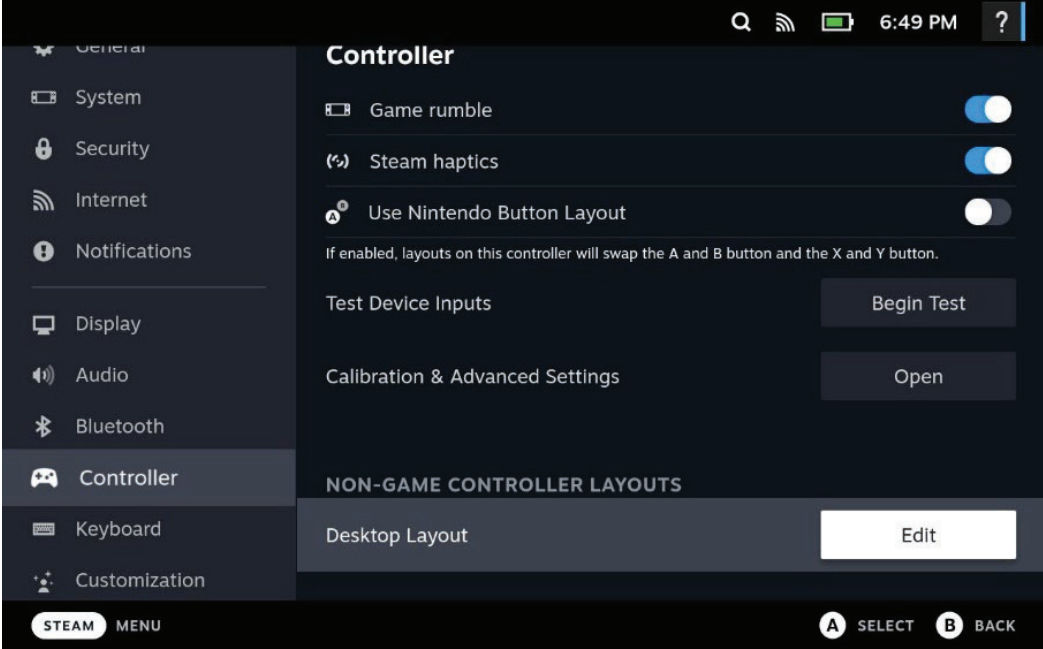
Claim 1	Valve's Accused Instrumentalities
	 This functionality indicates that Valve's Accused Handheld Instrumentalities receive an input signal comprising information associated with a manipulation of an input device configured to control a plurality of systems, wherein the input device comprises a touch-pad.
1[B] receiving a detent profile associated with one of the systems, the detent profile comprising haptic	Valve's Accused Handheld Instrumentalities receive a detent profile associated with one of the systems, the detent profile comprising haptic data associated with a virtual detent. For example, on the Steam Deck, how the trackpad acts in-game “depends significantly on the Behavior that has been assigned.”⁷ The chart below shows “the list of the Behaviors that are available for each control,”

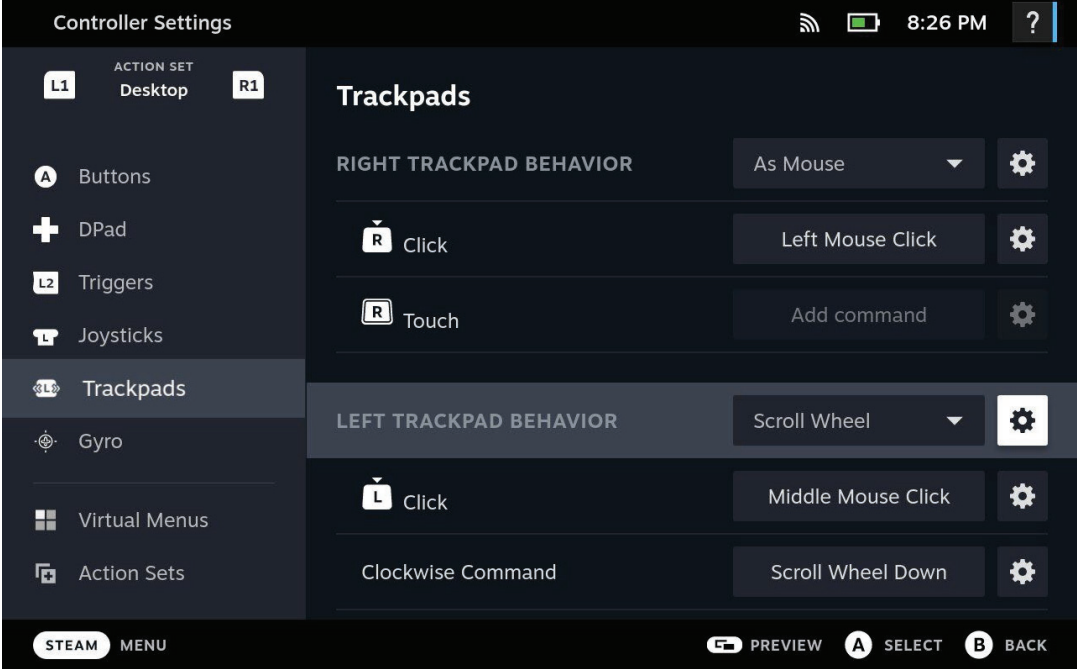
⁷ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

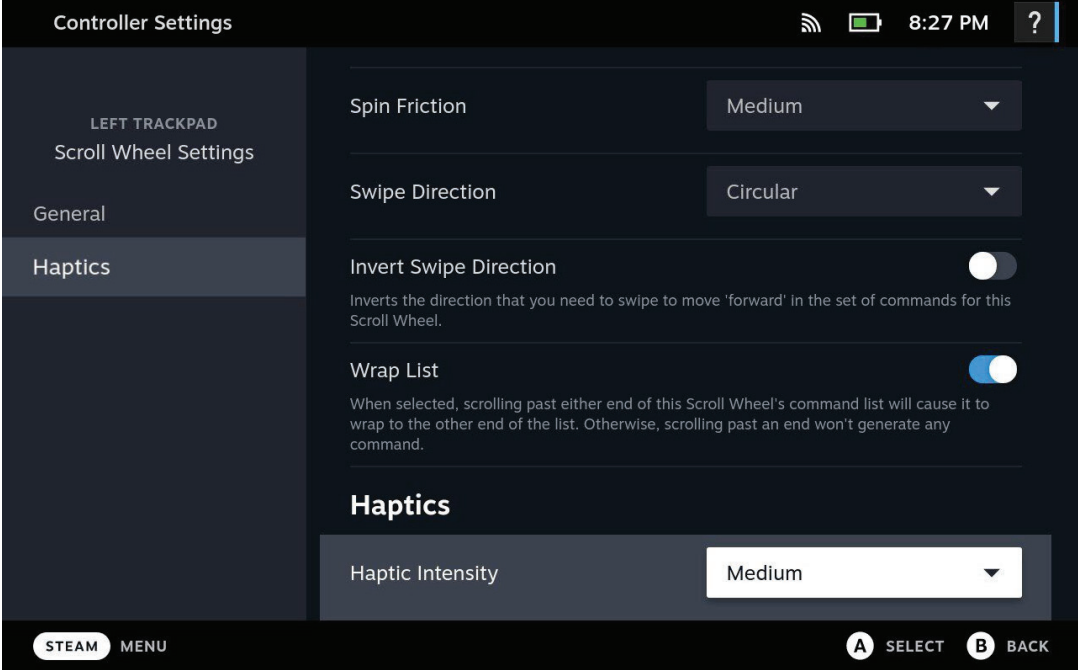
Claim 1	Valve’s Accused Instrumentalities																																																																																										
data associated with a virtual detent; and	including the Trackpads.⁸ Each of these behaviors will have default configurations as set through the controller layout for a given game:⁹ Behaviors - Introduction How the D-Pad, Button Pad, Analog Sticks, Trackpads, and Gyro act in-game depend significantly on the Behavior that has been assigned. For example, you can set [Right Trackpad] to use As Mouse, where sliding your thumb across the [Trackpad] moves the mouse cursor, or you can set it to Radial Menu, where moving your thumb on the [Trackpad] brings up a menu of user-defined options. Here is the list of the Behaviors that are available for each control: <table><tr><th>Behaviors</th><th>D-Pad</th><th>Button Pad</th><th>Analog Sticks</th><th>Trackpads</th><th>Gyro</th></tr><tr><td>Directional Pad</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Button Pad</td><td>✓</td><td>✓</td><td></td><td>✓</td><td>✓</td></tr><tr><td>As Mouse</td><td></td><td></td><td></td><td>✓</td><td>✓</td></tr><tr><td>As Joystick</td><td></td><td></td><td></td><td>✓</td><td>✓</td></tr><tr><td>Joystick</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Joystick Mouse</td><td></td><td></td><td>✓</td><td></td><td></td></tr><tr><td>Flick Stick</td><td></td><td></td><td>✓</td><td>✓</td><td></td></tr><tr><td>Scroll Wheel</td><td></td><td></td><td>✓</td><td>✓</td><td></td></tr><tr><td>Radial Menu</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr><tr><td>Touch Menu</td><td></td><td></td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Hotbar Menu</td><td>✓</td><td></td><td>✓</td><td>✓</td><td></td></tr><tr><td>Mouse Region</td><td></td><td></td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Single Button</td><td></td><td></td><td></td><td>✓</td><td></td></tr><tr><td>Directional Swipe</td><td></td><td></td><td></td><td>✓</td><td>✓</td></tr></table> Further, the “Steam” button menu allows for configuring the controller layout settings while in Desktop mode:	Behaviors	D-Pad	Button Pad	Analog Sticks	Trackpads	Gyro	Directional Pad	✓	✓	✓	✓	✓	Button Pad	✓	✓		✓	✓	As Mouse				✓	✓	As Joystick				✓	✓	Joystick	✓	✓	✓	✓	✓	Joystick Mouse			✓			Flick Stick			✓	✓		Scroll Wheel			✓	✓		Radial Menu	✓	✓	✓	✓		Touch Menu			✓	✓	✓	Hotbar Menu	✓		✓	✓		Mouse Region			✓	✓	✓	Single Button				✓		Directional Swipe				✓	✓
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⁸ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

⁹ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

Claim 1	Valve's Accused Instrumentalities
	 The default layout assigns the “Scroll Wheel” Behavior to the left trackpad, which is an example of a detent profile:

Claim 1	Valve's Accused Instrumentalities
	The screenshot displays the 'Controller Settings' menu for a Steam Controller. The left sidebar lists various settings: Buttons, DPad, Triggers, Joysticks, Trackpads (selected), Gyro, Virtual Menus, and Action Sets. The main area is titled 'Trackpads' and is divided into 'RIGHT TRACKPAD BEHAVIOR' and 'LEFT TRACKPAD BEHAVIOR'. Under 'RIGHT TRACKPAD BEHAVIOR', the 'As Mouse' dropdown is selected. Below it, 'Click' is mapped to 'Left Mouse Click' and 'Touch' is set to 'Add command'. Under 'LEFT TRACKPAD BEHAVIOR', the 'Scroll Wheel' dropdown is selected. Below it, 'Click' is mapped to 'Middle Mouse Click' and 'Clockwise Command' is mapped to 'Scroll Wheel Down'. The bottom of the screen shows navigation buttons: STEAM, MENU, PREVIEW, SELECT (A), and BACK (B). The top right corner of the interface shows a battery icon, signal strength, and the time 8:26 PM.
	Users can further view the default haptic intensity for this behavior:

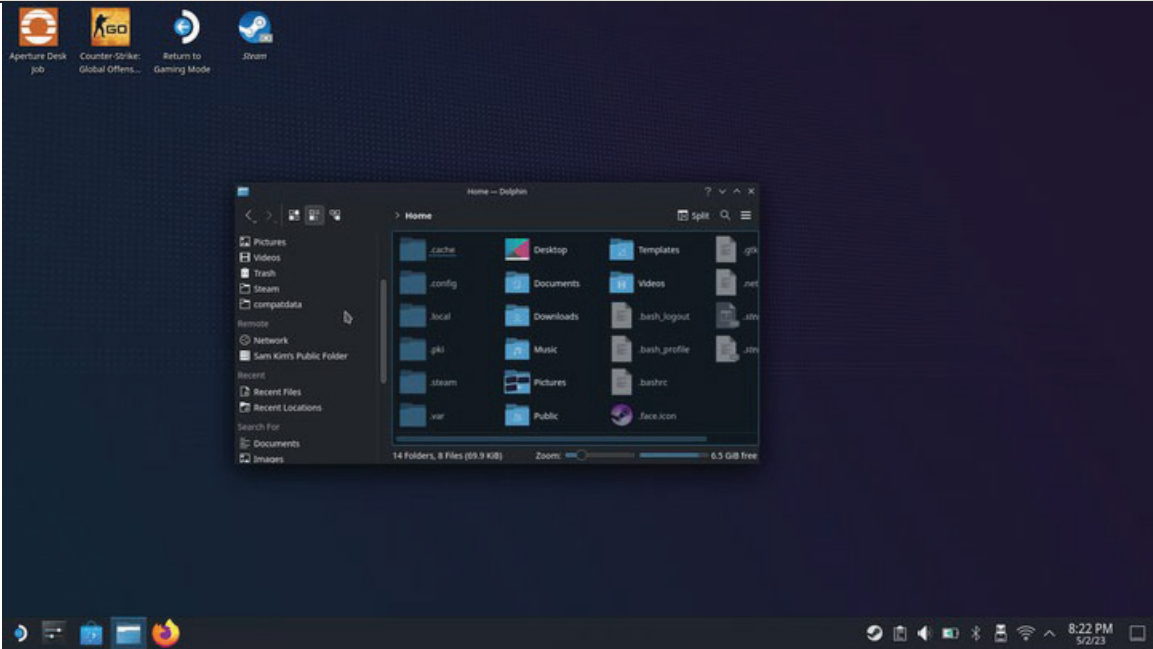
Claim 1	Valve's Accused Instrumentalities
	 This functionality indicates that Valve's Accused Handheld Instrumentalities receive a detent profile associated with one of the systems, the detent profile comprising haptic data associated with a virtual detent. As another example, testing in the following exemplary Valve games show exemplary use listed under LEFT TRACKPAD and RIGHT TRACKPAD with the trackpads having various behaviors (e.g., Camera, Directional Pad, Movement, D-Pad, etc.) as shown in screenshots included in the cited Exhibits: - Aperture Desk Job [Exh. C-1] - Artifact Classic [Exh. C-2] - Counter-Strike 2 [Exh. C-3] - Counter-Strike [Exh. C-4] - Counter-Strike: Source [Exh. C-5] - Counter-Strike: Condition Zero [Exh. C-6] - Day of Defeat [Exh. C-7]

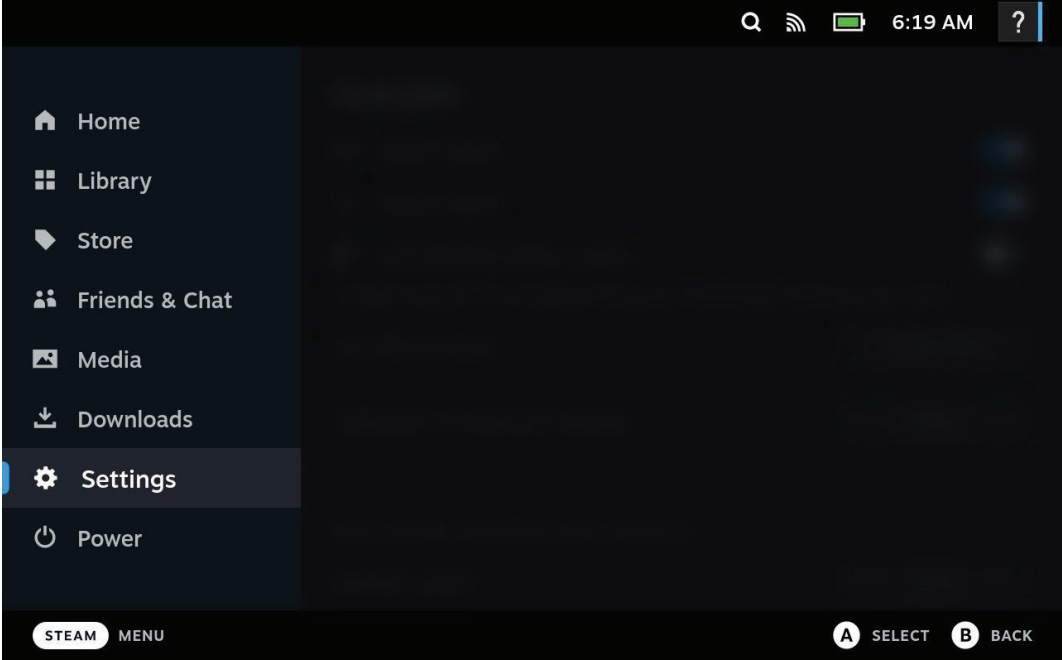
Immersion's Preliminary Infringement Contentions (10/20/2023)

Claim 1	Valve's Accused Instrumentalities
	- Day of Defeat: Source [Exh. C-8] - Deathmatch Classic [Exh. C-9] - Dota 2 [Exh. C-10] - Dota Underlords [Exh. C-11] - Garry's Mod [Exh. C-12] - Half-Life 2: Deathmatch [Exh. C-13] - Half-Life 2: Episode One [Exh. C-14] - Half-Life 2: Episode Two [Exh. C-15] - Half-Life 2 [Exh. C-16] - Half-Life: Blue Shift [Exh. C-17] - Half-Life Deathmatch: Source [Exh. C-18] - Half-Life [Exh. C-19] - Half-Life 2: Lost Coast [Exh. C-20] - Half-Life: Opposing Force [Exh. C-21] - Half-Life: Source [Exh. C-22] - Left 4 Dead 2 [Exh. C-23] - Portal 2 [Exh. C-24] - Portal [Exh. C-25] - Ricochet [Exh. C-26] - Team Fortress 2 [Exh. C-27] - Team Fortress Classic [Exh. C-28] As another example, testing in the following exemplary third party games (https://store.steampowered.com/sale/decktop100) show exemplary use listed under LEFT TRACKPAD and RIGHT TRACKPAD with the trackpads having various behaviors (e.g., Camera, Directional Pad, Movement, D-Pad, etc.) as shown in screenshots included in the cited Exhibits: - Hogwarts Legacy [Exh. C-29] - Vampire Survivors [Exh. C-30] - ELDEN RING [Exh. C-31] - Resident Evil 4 [Exh. C-32] - The Witcher® 3: Wild Hunt [Exh. C-33] - Dead Cells [Exh. C-34]

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Claim 1	Valve's Accused Instrumentalities
	- Hades [Exh. C-35] - Street Fighter™ 6 [Exh. C-36] - Brotato [Exh. C-37] - Red Dead Redemption 2 [Exh. C-38] - DREDGE [Exh. C-39] - Stardew Valley [Exh. C-40] - Grand Theft Auto V [Exh. C-41] - Cyberpunk 2077 [Exh. C-42] - OCTOPATH TRAVELER II [Exh. C-43] - Cult of the Lamb [Exh. C-44] - Hi-Fi RUSH [Exh. C-45] - No Man's Sky [Exh. C-46] - Persona 5 Royal [Exh. C-47] - STAR WARS Jedi: Fallen Order™ [Exh. C-48]
1[C] generating a vibrotactile signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent.	Valve's Accused Handheld Instrumentalities generate a vibrotactile signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent. For example, in Desktop Mode on the Steam Deck, using the left track pad acts as a scroll wheel. Testing this functionality confirms the vibrotactile effects for the "Scroll Wheel" Behavior, which is an example of a virtual detent:

Claim 1	Valve's Accused Instrumentalities
	 The screenshot displays a Linux desktop environment. At the top, there are four application icons: 'Aperture Desk job', 'Counter Strike: Global Offens...', 'Return to Gaming Mode', and 'Steam'. The desktop background is a dark, textured blue. A file manager window titled 'Home - Dolphin' is open in the center. The left sidebar shows a list of locations: Pictures, Videos, Trash, Steam, compasdata, Remote, Network, Sam Kim's Public Folder, Recent, Recent Files, Recent Locations, Search For, Documents, and Images. The main pane shows a grid of folders and files: .cache, Desktop, Templates, .config, Documents, Videos, .local, Downloads, .bash_logout, .gtk, Music, .bash_profile, .steam, Pictures, .bashrc, .war, Public, and face.icon. At the bottom of the window, it says '14 Folders, 8 Files (59.9 KiB)' and 'Zoom: 6.5 GiB free'. The system tray at the bottom right shows the time '8:22 PM' and date '5/2/23'. Further, pressing the left trackpad while viewing the user interface that results from pressing “Steam” menu button results in haptics similar to the “Directional Pad” behavior. That is, touching the top, bottom, left, and right edges of the right trackpad results in navigation and haptic effects, which is also an example of a virtual detent. Testing this functionality on the Steam Deck confirms these results.

Claim 1	Valve's Accused Instrumentalities
	 Where the trackpad behavior is enabled, Valve and third-party games generate a vibrotactile signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent.

Immersion's Preliminary Infringement Contentions (10/20/2023)

Claim 2	Valve's Accused Instrumentalities
2. The method of claim 1, further comprising generating a system signal associated with a system to be manipulated, the system signal based at least in part on the input signal, and wherein generating a system signal and generating the vibrotactile signal occur substantially simultaneously.	Valve's Accused Handheld Instrumentalities perform the method of claim 1, further comprising generating a system signal associated with a system to be manipulated, the system signal based at least in part on the input signal, and wherein generating a system signal and generating the vibrotactile signal occur substantially simultaneously. For example, using the touchpad with a given behavior, such as "As Mouse," results in actions, such as moving a cursor over a virtual keyboard, that occurs substantially simultaneously as a haptic effect. This functionality indicates that Valve's Accused Handheld Instrumentalities perform the method of claim 1, further comprising generating a system signal associated with a system to be manipulated, the system signal based at least in part on the input signal, and wherein generating a system signal and generating the vibrotactile signal occur substantially simultaneously.
Claim 3	Valve's Accused Instrumentalities
3. The method of claim 1, wherein the vibrotactile signal is further based in part of the status of the input device.	Valve's Accused Handheld Instrumentalities perform the method of claim 1, wherein the vibrotactile signal is further based in part of the status of the input device. On information and belief, using the touchpad with a given behavior, such as "As Mouse" or "As Joystick," requires maintaining state that reflect the status of the input device. This functionality indicates that Valve's Accused Handheld Instrumentalities perform the method of claim 1, wherein the vibrotactile signal is further based in part of the status of the input device.

Claim 7	Valve's Accused Instrumentalities																																																																																										
7. The method of claim 1, further comprising determining one of a plurality of virtual detents to generate.	Valve's Accused Handheld Instrumentalities perform the method of claim 1, further comprising determining one of a plurality of virtual detents to generate. For example, on the Steam Deck, how the trackpad acts in-game “depends significantly on the Behavior that has been assigned.”¹⁰ The chart below shows “the list of the Behaviors that are available for each control,” including the Trackpads, which support a plurality of Behaviors.¹¹ Behaviors - Introduction How the D-Pad, Button Pad, Analog Sticks, Trackpads, and Gyro act in-game depend significantly on the Behavior that has been assigned. For example, you can set [Right Trackpad] to use As Mouse, where sliding your thumb across the [Trackpad] moves the mouse cursor, or you can set it to Radial Menu, where moving your thumb on the [Trackpad] brings up a menu of user-defined options. Here is the list of the Behaviors that are available for each control: <table><thead><tr><th>Behaviors</th><th>D-Pad</th><th>Button Pad</th><th>Analog Sticks</th><th>Trackpads</th><th>Gyro</th></tr></thead><tbody><tr><td>Directional Pad</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Button Pad</td><td>✓</td><td>✓</td><td></td><td>✓</td><td>✓</td></tr><tr><td>As Mouse</td><td></td><td></td><td></td><td>✓</td><td>✓</td></tr><tr><td>As Joystick</td><td></td><td></td><td></td><td>✓</td><td>✓</td></tr><tr><td>Joystick</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Joystick Mouse</td><td></td><td></td><td>✓</td><td></td><td></td></tr><tr><td>Flick Stick</td><td></td><td></td><td>✓</td><td>✓</td><td></td></tr><tr><td>Scroll Wheel</td><td></td><td></td><td>✓</td><td>✓</td><td></td></tr><tr><td>Radial Menu</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr><tr><td>Touch Menu</td><td></td><td></td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Hotbar Menu</td><td>✓</td><td></td><td>✓</td><td>✓</td><td></td></tr><tr><td>Mouse Region</td><td></td><td></td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Single Button</td><td></td><td></td><td></td><td>✓</td><td></td></tr><tr><td>Directional Swipe</td><td></td><td></td><td></td><td>✓</td><td>✓</td></tr></tbody></table>	Behaviors	D-Pad	Button Pad	Analog Sticks	Trackpads	Gyro	Directional Pad	✓	✓	✓	✓	✓	Button Pad	✓	✓		✓	✓	As Mouse				✓	✓	As Joystick				✓	✓	Joystick	✓	✓	✓	✓	✓	Joystick Mouse			✓			Flick Stick			✓	✓		Scroll Wheel			✓	✓		Radial Menu	✓	✓	✓	✓		Touch Menu			✓	✓	✓	Hotbar Menu	✓		✓	✓		Mouse Region			✓	✓	✓	Single Button				✓		Directional Swipe				✓	✓
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Immersion's Preliminary Infringement Contentions (10/20/2023)

Claim 8	Valve's Accused Instrumentalities
8. The method of claim 1, wherein the detent profile comprises a first detent profile, and further comprising receiving a second detent profile.	Valve's Accused Handheld Instrumentalities perform the method of claim 1, wherein the detent profile comprises a first detent profile, and further comprising receiving a second detent profile. See Claim 7.
Claim 9	Valve's Accused Instrumentalities
9[P] A method comprising:	See below.
9[A] detecting a change in position of an input device configured to control one of the plurality of systems, wherein the input device comprises a touch-pad;	Valve's Accused Handheld Instrumentalities detect a change in position of an input device configured to control one of the plurality of systems, wherein the input device comprises a touch-pad. Further, the Steam Deck includes multiple touch-pads, including the right and left trackpads: ¹²

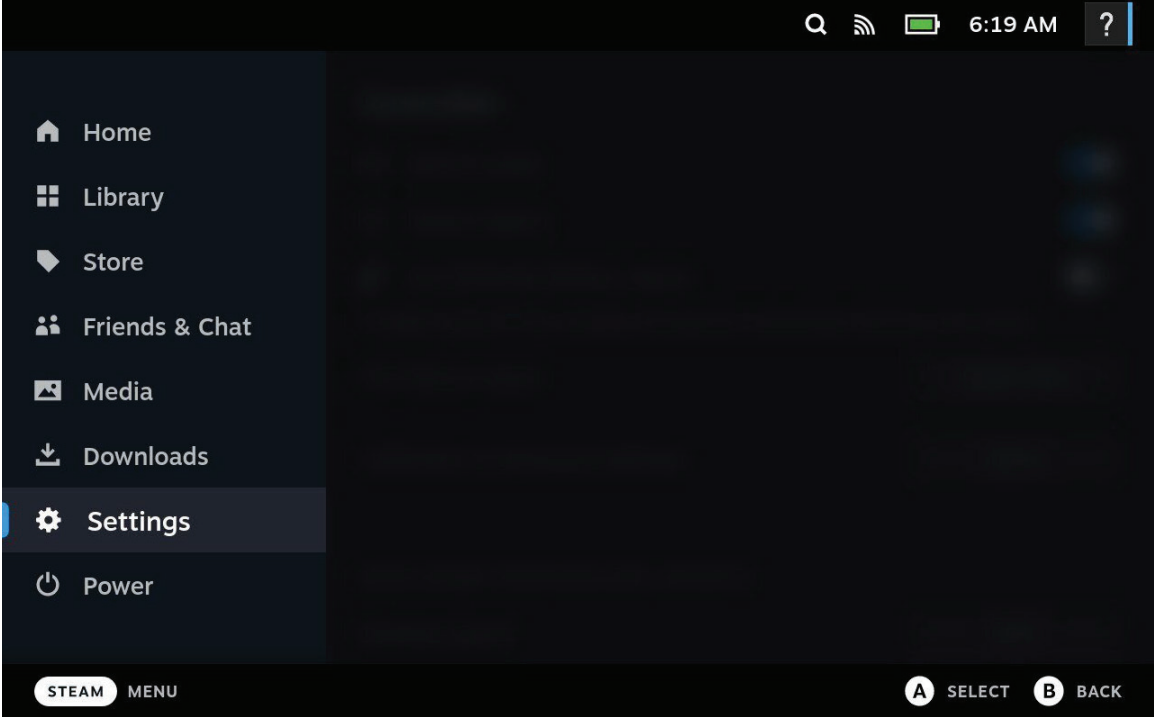
¹⁰ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

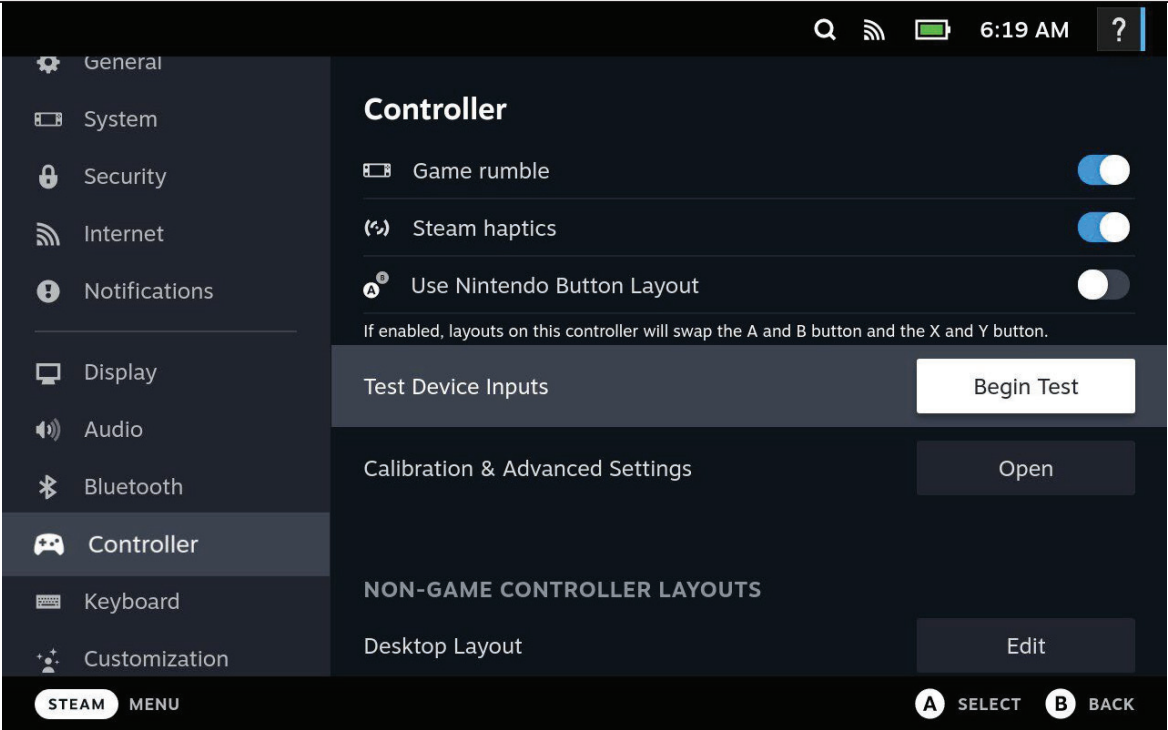
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¹² See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

Claim 9	Valve's Accused Instrumentalities
	Released by Valve in 2022, the Steam Deck is a handheld gaming PC that is designed to play all sorts of video games on the go. Along with being equipped with the processing power to play games at a satisfying visual fidelity, its controls include not only those found on a standard gamepad but also has a gyro, two trackpads, four grip buttons, and a multitouch touchscreen. This richness in input helps enable the Steam Deck to play games designed for gamepad, keyboard & mouse, and touch input across all types of genres.  Further, pressing the Steam button brings up a list of menu items for navigating to other parts of Steam:¹³

¹³ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

Claim 9	Valve's Accused Instrumentalities
	 For example, this menu allows users to “Test Device Inputs”:

Claim 9	Valve's Accused Instrumentalities
	A screenshot of the Steam desktop application's settings window, specifically the 'Controller' section. The left sidebar lists various settings categories: General, System, Security, Internet, Notifications, Display, Audio, Bluetooth, Controller (highlighted), Keyboard, and Customization. The main content area is titled 'Controller' and includes three toggle switches: 'Game rumble' (on), 'Steam haptics' (on), and 'Use Nintendo Button Layout' (off). Below these is a note: 'If enabled, layouts on this controller will swap the A and B button and the X and Y button.' There are three buttons: 'Test Device Inputs' (with a 'Begin Test' sub-button), 'Calibration & Advanced Settings' (with an 'Open' sub-button), and 'NON-GAME CONTROLLER LAYOUTS' (with an 'Edit' sub-button). The bottom of the window features a 'STEAM MENU' bar and navigation buttons for 'A SELECT' and 'B BACK'. The top status bar shows search, Wi-Fi, battery, and time (6:19 AM). The resulting interface shows the “Left Trackpad” position:

Claim 9	Valve's Accused Instrumentalities																
	Device Support: FXAA24510CE8 8:31 PM ?  Pull the Left Trigger <table><tbody><tr><td>Left Trigger</td><td>0</td><td>Right Trigger</td><td>0</td></tr><tr><td>Left Trackpad</td><td>18162, -20425</td><td>Right Trackpad</td><td>0, 0</td></tr><tr><td>Left Trackpad Click Pressure</td><td>5600</td><td>Right Trackpad Click Pressure</td><td>0</td></tr><tr><td>Left Joystick</td><td>0, 0</td><td>Right Joystick</td><td>0, 0</td></tr></tbody></table> STEAM MENU B HOLD TO EXIT This functionality indicates that Valve's Accused Handheld Instrumentalities detect a change in position of an input device configured to control one of the plurality of systems, wherein the input device comprises a touch-pad.	Left Trigger	0	Right Trigger	0	Left Trackpad	18162, -20425	Right Trackpad	0, 0	Left Trackpad Click Pressure	5600	Right Trackpad Click Pressure	0	Left Joystick	0, 0	Right Joystick	0, 0
Left Trigger	0	Right Trigger	0														
Left Trackpad	18162, -20425	Right Trackpad	0, 0														
Left Trackpad Click Pressure	5600	Right Trackpad Click Pressure	0														
Left Joystick	0, 0	Right Joystick	0, 0														
9[B] receiving a detent profile associated with one of the systems, the detent profile comprising haptic	Valve's Accused Handheld Instrumentalities receive a detent profile associated with one of the systems, the detent profile comprising haptic data associated with a virtual detent. See Limitation 1[B].																

Immersion's Preliminary Infringement Contentions (10/20/2023)

Claim 9	Valve's Accused Instrumentalities
data associated with a virtual detent; and	
9[C] generating a detent signal based at least in part on the detent profile and the change in position, the detent signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent, the vibrotactile effect based at least in part on the detent signal.	Valve's Accused Handheld Instrumentalities generate a detent signal based at least in part on the detent profile and the change in position, the detent signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent, the vibrotactile effect based at least in part on the detent signal. For example, the default "Behavior" for a trackpad is "As Mouse." With this Behavior enabled, moving a finger across the surface of the trackpad results in haptics, indicating that Valve's Accused Handheld Instrumentalities generate a detent signal based at least in part on the detent profile and the change in position, the detent signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent, the vibrotactile effect based at least in part on the detent signal.
Claim 10	Valve's Accused Instrumentalities
10[P] A non-transitory computer-readable medium on which is encoded program code, the program code comprising:	To the extent the preamble is determined to be limiting, Valve's Accused Handheld Instrumentalities include a non-transitory computer-readable medium on which is encoded program code, the program code comprising the limitations below. Further, Valve's Accused Handheld Instrumentalities include a processor, RAM, and storage for storing a program configured to be executed by a processor:¹⁴

¹⁴ See https://store.steampowered.com/steamdeck/#SaleSection_24468.

Claim 10	Valve's Accused Instrumentalities
	Tech Specs Compute Processor AMD APU CPU: Zen 2 4c/8t, 2.4-3.5GHz (up to 448 GFlops FP32) GPU: 8 RDNA 2 CUs, 1.0-1.6GHz (up to 1.6 TFlops FP32) APU power: 4-15W RAM 16 GB LPDDR5 on-board RAM (5500 MT/s quad 32-bit channels) Storage 64 GB eMMC (PCIe Gen 2 x1) 256 GB NVMe SSD (PCIe Gen 3 x4 or PCIe Gen 3 x2*) 512 GB high-speed NVMe SSD (PCIe Gen 3 x4 or PCIe Gen 3 x2*) <i>All models use socketed 2230 m.2 modules (not intended for end-user replacement) All models include high-speed microSD card slot *Some 256GB and 512GB models ship with a PCIe Gen 3 x2 SSD. In our testing, we did not see any impact to gaming performance between x2 and x4.</i> Further, Valve's SteamVR supports multiple engines, including the Unity Engine¹⁵, the Unreal Engine¹⁶, and the proprietary Source 2 Engine, through multiple SDKs such as OpenVR¹⁷ and OpenXR¹⁸ to implement applications and games. As one example, OpenVR is divided into two layers: application and driver. Valve documentation notes that, "One real-world example of an application is a game engine like Unity."¹⁹ Further, "OpenVR for application talks to SteamVR. SteamVR then talks to OpenVR driver."²⁰

¹⁵ See https://valvesoftware.github.io/steamvr_unity_plugin/ (last accessed May 10, 2023); <https://github.com/ValveSoftware/unity-xr-plugin> (last accessed May 10, 2023).

¹⁶ See https://github.com/ValveSoftware/steamvr_unreal_plugin (last accessed May 10, 2023).

¹⁷ See <https://help.steampowered.com/en/faqs/view/46C3-050A-2E52-12D6> (last accessed May 10, 2023); <https://github.com/ValveSoftware/openvr/wiki/API-Documentation> (last accessed May 10, 2023).

¹⁸ See <https://github.com/ValveSoftware/OpenXR-Canonical-Pose-Tool> (last accessed May 10, 2023); https://github.com/ValveSoftware/openxr_engine_plugins (last accessed May 10, 2023).

¹⁹ See <https://github.com/ValveSoftware/openvr/wiki/API-Documentation> (last accessed May 10, 2023).

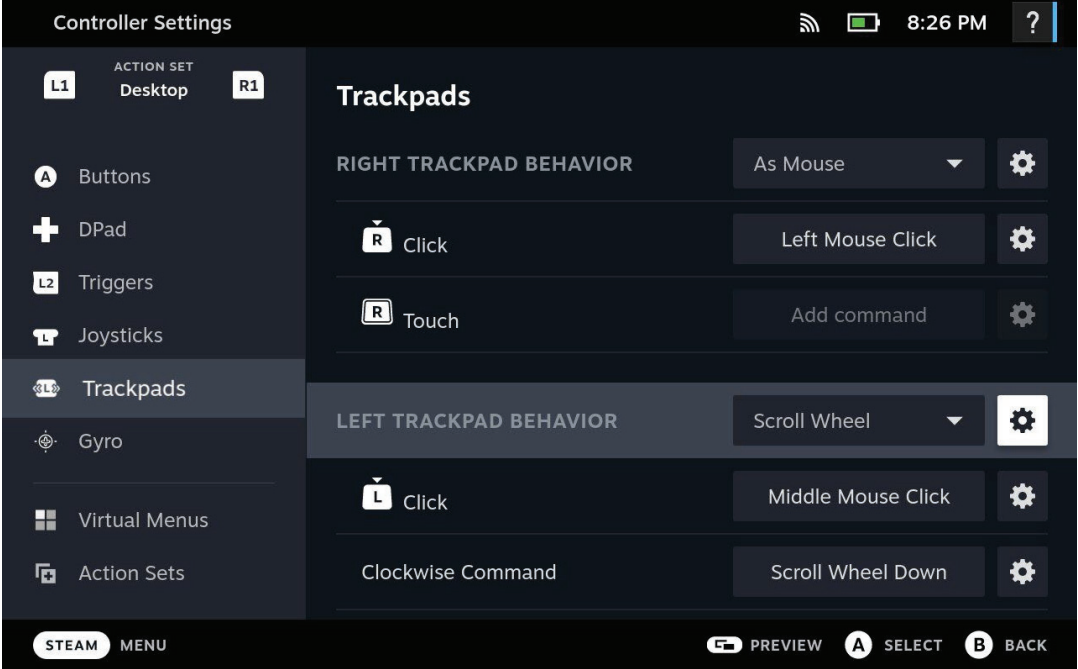
²⁰ See <https://github.com/ValveSoftware/openvr/wiki/API-Documentation> (last accessed May 10, 2023).

Immersion's Preliminary Infringement Contentions (10/20/2023)

Claim 10	Valve's Accused Instrumentalities
10[A] program code for receiving an input signal comprising information associated with the manipulation of an input device configured to control one of a plurality of systems, wherein the input device comprises a touch-pad;	Valve's Accused Handheld Instrumentalities include program code for receiving an input signal comprising information associated with the manipulation of an input device configured to control one of a plurality of systems, wherein the input device comprises a touch-pad. See limitation 1[A].
10[B] program code for receiving a detent profile associated with one of the systems, the detent profile comprising haptic data associated with a virtual detent; and	Valve's Accused Handheld Instrumentalities include program code for receiving a detent profile associated with one of the systems, the detent profile comprising haptic data associated with a virtual detent. See limitation 1[B].
10[C] program code for generating a detent signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect	Valve's Accused Handheld Instrumentalities include program code for generating a detent signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent. See limitation 1[C].

Immersion's Preliminary Infringement Contentions (10/20/2023)

Claim 10	Valve's Accused Instrumentalities
comprising the virtual detent.	
Claim 11	Valve's Accused Instrumentalities
11. The computer-readable medium of claim 10, further comprising program code for generating a system signal associated with a system to be manipulated, the system signal based at least in part on the input signal.	Valve's Accused Handheld Instrumentalities include the computer-readable medium of claim 10, further comprising program code for generating a system signal associated with a system to be manipulated, the system signal based at least in part on the input signal. See Claim 2.
Claim 13	Valve's Accused Instrumentalities
13. The computer-readable medium of claim 10, further comprising program code for determining a virtual detent to generate.	Valve's Accused Handheld Instrumentalities include the computer-readable medium of claim 10, further comprising program code, further comprising program code for determining a virtual detent to generate. For example, limitation 1[B] explains the Controller Settings configuration that can be used to set a Behavior for a trackpad:

Claim 13	Valve's Accused Instrumentalities
	 This setting indicates that Valve's Accused Handheld Instrumentalities include program code for determining a virtual detent to generate.
Claim 14	Valve's Accused Instrumentalities
14[P] A non-transitory computer-readable medium on which is encoded program code, the program code comprising:	To the extent the preamble is determined to be limiting, Valve's Accused Handheld Instrumentalities include a non-transitory computer-readable medium on which is encoded program code, the program code comprising the limitations below. See 10[P].

Immersion's Preliminary Infringement Contentions (10/20/2023)

Claim 14	Valve's Accused Instrumentalities
14[A] program code for detecting a change in position of an input device configured to control one of the plurality of systems, wherein the input device comprises a touch-pad;	Valve's Accused Handheld Instrumentalities include program code for detecting a change in position of an input device configured to control one of the plurality of systems, wherein the input device comprises a touch-pad. See limitation 9[A].
14[B] program code for receiving a detent profile associated with one of the systems, the detent profile comprising haptic data associated with a virtual detent; and	Valve's Accused Handheld Instrumentalities include program code for receiving a detent profile associated with one of the systems, the detent profile comprising haptic data associated with a virtual detent. See limitation 9[B].
14[C] program code for generating a detent signal based at least in part on the change in position, the detent signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the	Valve's Accused Handheld Instrumentalities include program code for generating a detent signal based at least in part on the change in position, the detent signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent, the vibrotactile effect based as least in part on the detent signal. See limitation 9[C].

Claim 14	Valve's Accused Instrumentalities																			
virtual detent, the vibrotactile effect based as least in part on the detent signal.																				
Claim 15	Valve's Accused Instrumentalities																			
15[P] A system comprising:	To the extent the preamble is determined to be limiting, Valve's Accused Handheld Instrumentalities include a system that meets the limitations below. For example, Valve's Accused Handheld Instrumentalities include a processor, RAM, and storage for storing a program configured to be executed by a processor:²¹ Tech Specs <table> <tr> <td colspan="2">Compute</td></tr> <tr> <td rowspan="3">Processor</td><td>AMD APU</td></tr> <tr> <td>CPU: Zen 2 4c/8t, 2.4-3.5GHz (up to 448 GFlops FP32)</td></tr> <tr> <td>GPU: 8 RDNA 2 CUs, 1.0-1.6GHz (up to 1.6 TFlops FP32)</td></tr> <tr> <td></td><td>APU power: 4-15W</td></tr> <tr> <td>RAM</td><td>16 GB LPDDR5 on-board RAM (5500 MT/s quad 32-bit channels)</td></tr> <tr> <td rowspan="4">Storage</td><td>64 GB eMMC (PCIe Gen 2 x1)</td></tr> <tr> <td>256 GB NVMe SSD (PCIe Gen 3 x4 or PCIe Gen 3 x2*)</td></tr> <tr> <td>512 GB high-speed NVMe SSD (PCIe Gen 3 x4 or PCIe Gen 3 x2*)</td></tr> <tr> <td>All models use socketed 2230 m.2 modules (not intended for end-user replacement)</td></tr> <tr> <td></td><td>All models include high-speed microSD card slot</td></tr> <tr> <td></td><td>*Some 256GB and 512GB models ship with a PCIe Gen 3 x2 SSD. In our testing, we did not see any impact to gaming performance between x2 and x4.</td></tr> </table>	Compute		Processor	AMD APU	CPU: Zen 2 4c/8t, 2.4-3.5GHz (up to 448 GFlops FP32)	GPU: 8 RDNA 2 CUs, 1.0-1.6GHz (up to 1.6 TFlops FP32)		APU power: 4-15W	RAM	16 GB LPDDR5 on-board RAM (5500 MT/s quad 32-bit channels)	Storage	64 GB eMMC (PCIe Gen 2 x1)	256 GB NVMe SSD (PCIe Gen 3 x4 or PCIe Gen 3 x2*)	512 GB high-speed NVMe SSD (PCIe Gen 3 x4 or PCIe Gen 3 x2*)	All models use socketed 2230 m.2 modules (not intended for end-user replacement)		All models include high-speed microSD card slot		*Some 256GB and 512GB models ship with a PCIe Gen 3 x2 SSD. In our testing, we did not see any impact to gaming performance between x2 and x4.
Compute																				
Processor	AMD APU																			
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²¹ See https://store.steampowered.com/steamdeck/#SaleSection_24468.

Claim 15	Valve's Accused Instrumentalities
	Further, Valve's SteamVR supports multiple engines, including the Unity Engine²², the Unreal Engine²³, and the proprietary Source 2 Engine, through multiple SDKs such as OpenVR²⁴ and OpenXR²⁵ to implement applications and games. As one example, OpenVR is divided into two layers: application and driver. Valve documentation notes that, "One real-world example of an application is a game engine like Unity."²⁶ Further, "OpenVR for application talks to SteamVR. SteamVR then talks to OpenVR driver."²⁷
15[A] an input device configured to control one of a plurality of systems, wherein the input device comprises a touch-pad;	Valve's Accused Handheld Instrumentalities include an input device configured to control one of a plurality of systems, wherein the input device comprises a touch-pad. See limitation 1[A].
15[B] a processor in communication with the input device, the processor configured to receive an input signal and detent profile associated	Valve's Accused Handheld Instrumentalities include a processor in communication with the input device, the processor configured to receive an input signal and detent profile associated with one of the systems, the detent profile comprising haptic data associated with a virtual detent, the processor further configured to generate a detent signal. See preamble for how Valve's Accused Handheld Instrumentalities include a processor in communication with the input device.

²² See https://valvesoftware.github.io/steamvr_unity_plugin/ (last accessed May 10, 2023); <https://github.com/ValveSoftware/unity-xr-plugin> (last accessed May 10, 2023).

²³ See https://github.com/ValveSoftware/steamvr_unreal_plugin (last accessed May 10, 2023).

²⁴ See <https://help.steampowered.com/en/faqs/view/46C3-050A-2E52-12D6> (last accessed May 10, 2023); <https://github.com/ValveSoftware/openvr/wiki/API-Documentation> (last accessed May 10, 2023).

²⁵ See <https://github.com/ValveSoftware/OpenXR-Canonical-Pose-Tool> (last accessed May 10, 2023); https://github.com/ValveSoftware/openxr_engine_plugins (last accessed May 10, 2023).

²⁶ See <https://github.com/ValveSoftware/openvr/wiki/API-Documentation> (last accessed May 10, 2023).

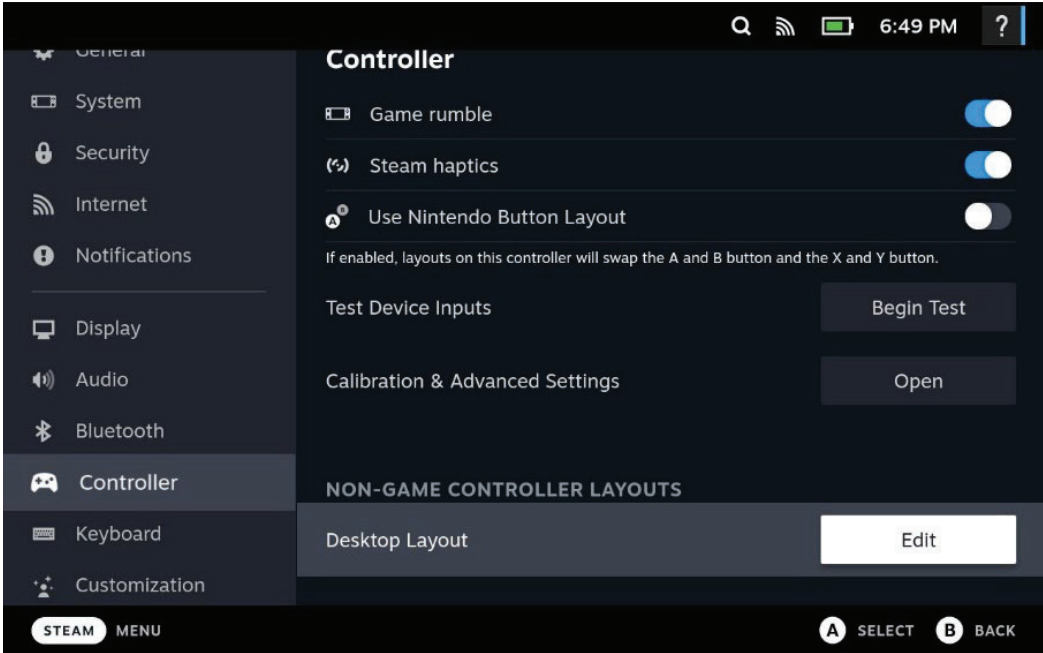
²⁷ See <https://github.com/ValveSoftware/openvr/wiki/API-Documentation> (last accessed May 10, 2023).

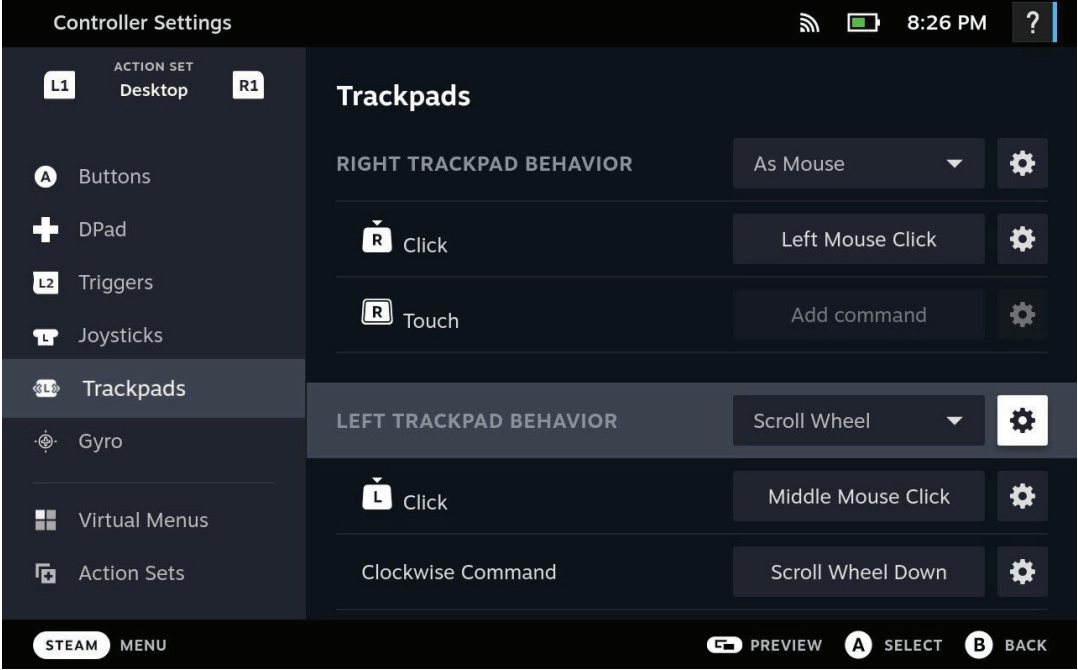
Claim 15	Valve’s Accused Instrumentalities																																																																																										
with one of the systems, the detent profile comprising haptic data associated with a virtual detent, the processor further configured to generate a detent signal; and	Further, on the Steam Deck, how the trackpad acts in-game “depends significantly on the Behavior that has been assigned.”²⁸ The chart below shows “the list of the Behaviors that are available for each control,” including the Trackpads.²⁹ Each of these behaviors will have default configurations as set through the controller layout for a given game:³⁰ Behaviors - Introduction How the D-Pad, Button Pad, Analog Sticks, Trackpads, and Gyro act in-game depend significantly on the Behavior that has been assigned. For example, you can set [Right Trackpad] to use As Mouse, where sliding your thumb across the [Trackpad] moves the mouse cursor, or you can set it to Radial Menu, where moving your thumb on the [Trackpad] brings up a menu of user-defined options. Here is the list of the Behaviors that are available for each control: <table><tr><th>Behaviors</th><th>D-Pad</th><th>Button Pad</th><th>Analog Sticks</th><th>Trackpads</th><th>Gyro</th></tr><tr><td>Directional Pad</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Button Pad</td><td>✓</td><td>✓</td><td></td><td>✓</td><td>✓</td></tr><tr><td>As Mouse</td><td></td><td></td><td></td><td>✓</td><td>✓</td></tr><tr><td>As Joystick</td><td></td><td></td><td></td><td>✓</td><td>✓</td></tr><tr><td>Joystick</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Joystick Mouse</td><td></td><td></td><td>✓</td><td></td><td></td></tr><tr><td>Flick Stick</td><td></td><td></td><td>✓</td><td>✓</td><td></td></tr><tr><td>Scroll Wheel</td><td></td><td></td><td>✓</td><td>✓</td><td></td></tr><tr><td>Radial Menu</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr><tr><td>Touch Menu</td><td></td><td></td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Hotbar Menu</td><td>✓</td><td></td><td>✓</td><td>✓</td><td></td></tr><tr><td>Mouse Region</td><td></td><td></td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Single Button</td><td></td><td></td><td></td><td>✓</td><td></td></tr><tr><td>Directional Swipe</td><td></td><td></td><td></td><td>✓</td><td>✓</td></tr></table>	Behaviors	D-Pad	Button Pad	Analog Sticks	Trackpads	Gyro	Directional Pad	✓	✓	✓	✓	✓	Button Pad	✓	✓		✓	✓	As Mouse				✓	✓	As Joystick				✓	✓	Joystick	✓	✓	✓	✓	✓	Joystick Mouse			✓			Flick Stick			✓	✓		Scroll Wheel			✓	✓		Radial Menu	✓	✓	✓	✓		Touch Menu			✓	✓	✓	Hotbar Menu	✓		✓	✓		Mouse Region			✓	✓	✓	Single Button				✓		Directional Swipe				✓	✓
Behaviors	D-Pad	Button Pad	Analog Sticks	Trackpads	Gyro																																																																																						
Directional Pad	✓	✓	✓	✓	✓																																																																																						
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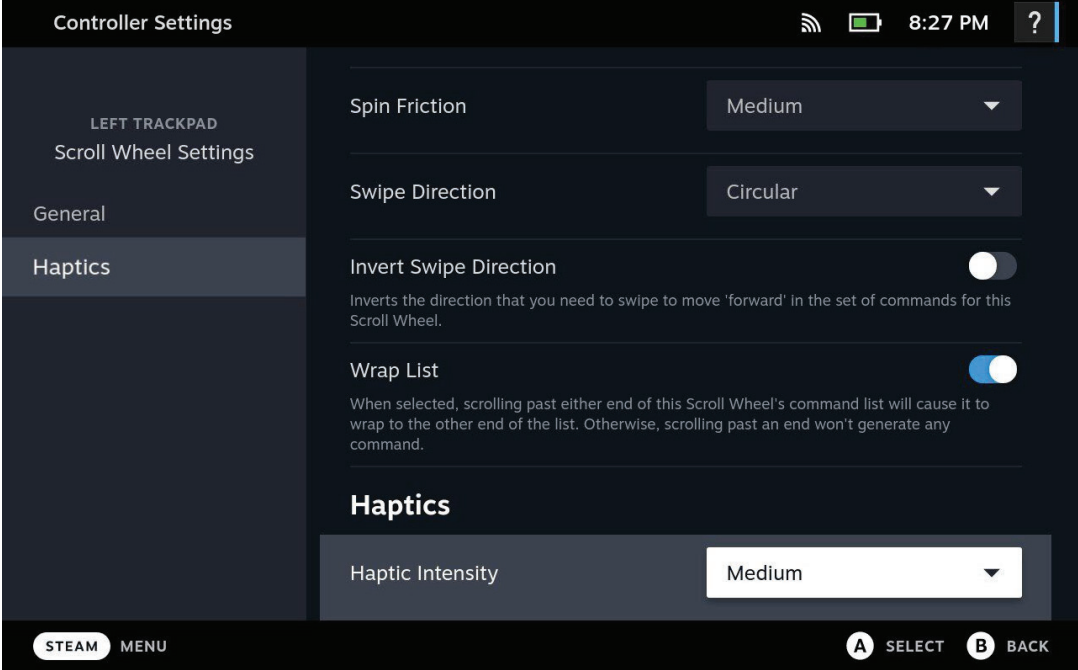
²⁸ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

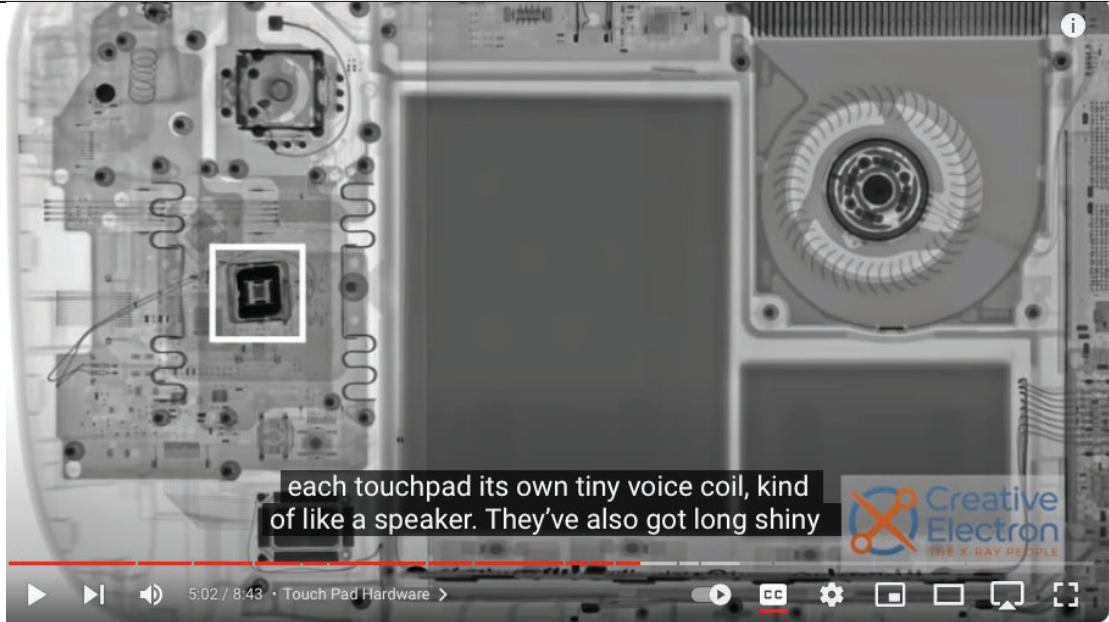
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³⁰ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).

Claim 15	Valve's Accused Instrumentalities
	Further, the “Steam” button menu allows for configuring the controller layout settings while in Desktop mode:  The default layout assigns the “Scroll Wheel” Behavior to the left trackpad, which is an example of a detent profile:

Claim 15	Valve's Accused Instrumentalities
	 Users can further view the default haptic intensity for this behavior:

Claim 15	Valve's Accused Instrumentalities
	 This functionality indicates that Valve's Accused Handheld Instrumentalities include a processor in communication with the input device, the processor configured to receive an input signal and detent profile associated with one of the systems, the detent profile comprising haptic data associated with a virtual detent, the processor further configured to generate a detent signal.
15[C] at least one actuator coupled to the input device, the at least one actuator configured to receive the detent signal and produce a vibrotactile effect to	Valve's Accused Handheld Instrumentalities include at least one actuator coupled to the input device, the at least one actuator configured to receive the detent signal and produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent. For example, each touch pad has its own actuator:

Claim 15	Valve's Accused Instrumentalities
the input device, the vibrotactile effect comprising the virtual detent.	 each touchpad its own tiny voice coil, kind of like a speaker. They've also got long shiny https://youtu.be/4T0RZ6ustKQ?si=7ayurx_3FYVA5N9u&t=291 Further, testing on the Steam Deck confirm haptic effects for the use cases described in Limitation 1[C].
Claim 16	Valve's Accused Instrumentalities
16. The system of claim 15, wherein the processor is further configured to control a system based at least in part on a manipulation of the input device.	Valve's Accused Handheld Instrumentalities include the system of claim 15, wherein the processor is further configured to control a system based at least in part on a manipulation of the input device. For example, as explained in Limitation 1[C], the described use cases demonstrate that the processor is further configured to control a system based at least in part on a manipulation of the input device.

Immersion's Preliminary Infringement Contentions (10/20/2023)

Claim 18	Valve's Accused Instrumentalities
18. The system of claim 15, wherein the at least one actuator is coupled to a housing of the input device.	Valve's Accused Handheld Instrumentalities include the system of claim 15, wherein the at least one actuator is coupled to a housing of the input device. See Limitation 15[C].

Claim 19	Valve's Accused Instrumentalities
19. The system of claim 15, wherein the input device comprises a sensor.	Valve's Accused Handheld Instrumentalities include the system of claim 15, wherein the input device comprises a sensor. For example, Further, the Steam Deck includes multiple touch-pads that are touch-sensitive:³¹ Released by Valve in 2022, the Steam Deck is a handheld gaming PC that is designed to play all sorts of video games on the go. Along with being equipped with the processing power to play games at a satisfying visual fidelity, its controls include not only those found on a standard gamepad but also has a gyro, two trackpads, four grip buttons, and a multitouch touchscreen. This richness in input helps enable the Steam Deck to play games designed for gamepad, keyboard & mouse, and touch input across all types of genres. 

³¹ See <https://steamcommunity.com/sharedfiles/filedetails/?id=2804823261> (last accessed May 10, 2023).