IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

SVV TECHNOLOGY INNOVATIONS INC.	§	
	§	
Plaintiff,	§	
	§	**Civil Action No. 6:22-cv-00640**
v.	§	
	§	**JURY DEMANDED**
ACER INC.	§	
	§	
Defendant.	§	

PLAINTIFF'S COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff SVV Technology Innovations Inc. ("SVVTI" or "Plaintiff") files this Complaint for patent infringement against Acer Inc. ("Acer" or "Defendant"). Plaintiff alleges infringement of United States Patent Numbers 8,740,397 ("'397 Patent"), 9,678,321 ("'321 Patent"); 10,797,191 ("'191 Patent"); 10,838,135 ("'135 Patent); and 10,868,205 ("'205 Patent"); collectively, the "Asserted Patents."

PARTIES

1. Plaintiff SVVTI is a California corporation with a place of business 1832 Tribute Road, Suite C, Sacramento, California 95815.

2. On information and belief, Acer Inc. is a corporation organized and existing under the laws of Taiwan with a principal place of business at 8F., No.88, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan,.R.O.C.

JURISDICTION AND VENUE

3. This is an action for patent infringement arising under the patent laws of the United States, Title 35, United States Code. Jurisdiction as to these claims is conferred on this Court by 35 U.S.C. §§1331 and 1338(a).

4. This Court has personal jurisdiction over Acer because, directly or through intermediaries, each has committed acts within the Western District of Texas giving rise to this action and/or has established minimum contacts with the Western District of Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

5. Acer has placed or contributed to placing infringing products into the stream of commerce via an established distribution channel knowing or understanding that such products would be sold and used in the United States, including in the Western District of Texas.

6. This Court has specific personal jurisdiction over Acer at least in part because Acer conducts business in this Judicial District. SVVTI's causes of action arise, at least in part, from Defendant's contacts with and activities in the State of Texas and this Judicial District. The exercise of jurisdiction over Acer would not offend traditional notions of fair play and substantial justice. Defendant Acer, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the patents-in-suit, including the accused devices as alleged herein.

7. On information and belief, Acer also has derived substantial revenues from infringing acts in this Judicial District, including from the sale and use of infringing products including, but not limited to, the products accused of infringement below.

8. On information and belief, Acer maintains authorized sellers and sales representatives that offer and sell products pertinent to this Complaint throughout the State of Texas, including this District and to consumers throughout this District.

9. Defendant has established minimum contacts with this forum such that the exercise of jurisdiction over Defendant would not offend traditional notions of fair play and substantial justice.

10. Venue in this Judicial District is proper as to Acer under 28 U.S.C. § 1391(c)(3) because it is a foreign corporation. Defendant has committed acts within this judicial district giving rise to this action, and Defendant continues to conduct business in this judicial district, including one or more acts of selling, using, importing and/or offering for sale infringing products or providing service and support to Defendant's customers in this District. This district is familiar with the technology of the Patents-in-Suit having presided over another lawsuit involving the Patents-in-Suit.

11. In addition, Defendant has knowingly induced and continues to knowingly induce infringement within this District by advertising, marketing, offering for sale and/or selling devices pre-loaded with infringing functionality within this District, to consumers, customers, manufacturers, distributors, resellers, partners, and/or end users, and providing instructions, user manuals, advertising, and/or marketing materials which facilitate, direct or encourage the use of infringing functionality with knowledge thereof.

12. Personal jurisdiction also exists specifically over Defendant because Defendant, directly or through affiliates, subsidiaries, agents, or intermediaries, transacts business in this State or purposefully directed at this State (including, without limitation, retail stores including

Best Buy and Walmart) by making, importing, offering to sell, selling, and/or having sold infringing products within this State and District or purposefully directed at this State or District.

13. In addition, Defendant, directly or through affiliates, subsidiaries, agents, or intermediaries, places infringing products into the stream of commerce knowing they will be sold and used in Texas, and economically benefits from the retail sale of infringing products in this State. For example, Defendant's products have been sold and are available for sale in this District at Best Buy and Walmart retail stores and are also available for sale and offered for sale in this District through online retailers such as Best Buy, Walmart, and Amazon.

14. Via Defendant's agents, intermediaries, distributors, importers, customers, and/or consumers maintaining a business presence, operating in, and/or residing in the U.S., Defendant's products, including products and processes accused of infringing the patents-in-suit, are or have been widely distributed and sold in retail stores, both brick and mortar and online, in Texas including within this judicial district. *See Litecubes, LLC v. Northern Light Products, Inc.*, 523 F.3d 1353, 1369-70 (Fed. Cir. 2008) ("[T]he sale [for purposes of § 271] occurred at the location of the buyer."); *see also Semcon IP Inc. v. Kyocera Corp.*, No. 2:18-cv-00197-JRG, 2019 WL 1979930, at *3 (E.D. Tex. May 3, 2019) (denying accused infringer's motion to dismiss because plaintiff sufficiently plead that purchases of infringing products outside of the United States for importation into and sales to end users in the U.S. may constitute an offer to sell under § 271(a)). For example, Defendant's products are sold to end users by online stores and at retail stores located throughout the Western District of Texas.

15. In the alternative, the Court has personal jurisdiction over Defendant under Fed. R. Civ. P. 4(k)(2), because the claims for patent infringement in this action arise under federal

law, Defendant is not subject to the jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction over Defendant is consistent with the U.S. Constitution.

FACTUAL BACKGROUND

16. SVVTI was founded in 2000 by Dr. Sergiy Vasylyev, a scientist and prolific inventor.

17. Dr. Sergiy Vasylyev has an academic background and more than 20 years of research experience in physical sciences. He received an M.S. equivalent in Physics and Astronomy from the Kharkiv State University, Ukraine in 1992 and a Ph.D. in Physics and Mathematics from the Main Astronomical Observatory of National Academy of Sciences of Ukraine in 1996. From 1996 to 1999, he worked with several major academic research institutions and was involved in diverse research projects in the areas of space physics and solar energy. After immigrating to the U.S., in 2000, Dr. Vasylyev founded SVV Technology Innovations, Inc. to develop and commercialize his ideas in several technical fields ranging from optics and information technology to solar energy and lighting. Dr. Vasylyev is the author of approximately eighty patents and dozens of patent applications, has had numerous talks and presentations at the national and international conferences related to space physics, solar energy and lighting and has authored/co-authored over 30 scientific and technical publications. Dr. Vasylyev's broad technical expertise areas include IT/IOT, optics, photonics, lightguide-based illumination systems, solar energy, daylighting, and solid-state lighting.

18. Since its inception, SVVTI has been a vehicle for developing and commercializing Dr. Vasylyev's inventions, particularly being dedicated to creating impactful technology solutions that find utility in energy efficiency, renewable energy and certain types consumer products. One

technology focus is optical advances that enhance solar energy harvesting and save energy in illumination systems.

19. SVVTI has invented and validated several ground-breaking technology solutions and has accumulated an extensive knowledge and built a diverse IP portfolio in optics, photonics, solar energy, daylighting and solid-state lighting fields. SVVTI has received innovation awards from TechConnect, Cleantech Open, and Illuminating Engineering Society.

20. SVVTI has developed and demonstrated several novel types of optical collectors for solar energy applications, significantly improving over the traditional technologies in terms of material intensity, concentration ratio, beam uniformity and solar-to-electric conversion efficiency.

21. Another notable technology developed by SVVTI is a unique daylight redirecting film material (Daylighting Fabric®) which is applied to windows of a building façade to redirect natural daylight deep into the interior space for improving natural illumination and saving energy used for lighting.

22. SVVTI has also developed and demonstrated various types of innovative wide-area illumination panels and backlights employing light guides and light emitting diodes (LEDs). These panels can be tailored for specific applications and improving various characteristics of illumination systems, including, for example, light beam diffusion, emission directionality, material efficiency, luminous efficacy, glare control, design options and aesthetics.

23. On or about, January 29, 2021, Acer received a letter from SVVTI, introducing SVVTI, notifying Acer of several of the patents identified below, and identifying several of Acer's products that utilize SVVTI's intellectual property.

24. Defendant has been aware of the Asserted Patents since, at least, January 29, 2021 when Acer received SVVTI's letter disclosing and attaching each of these patents, and identifying several of Acer's products utilizing claims of such patents which were also identified in SVVTI's letter.

TECHNOLOGY BACKGROUND

25. Several of the products accused of infringement below are products that contain displays using LED-illuminated LCD technology. A LED-illuminated LCD (liquid-crystal display) is a flat-panel display that uses LED (light-emitting diode) illumination. The illumination may come from LEDs along one or more sides of the display (edge-lit) or from full-array backlighting (direct-lit). As explained below, some displays use a quantum dot enhancement film ("QDEF").

26. Several of the products accused of infringement below are QLED monitors. QLED stands for quantum dot LED.

27. Acer sells monitors that use QLED technology and heavily markets them to the gaming community. Notable products include the Acer X27, X35, XB3, and EI1 monitor lines.

28. Generally, quantum dots are small, semiconductor particles that have unique optical and electronic properties, including the ability to produce pure monochromatic red, green, and/or blue light.

29. A widespread commercial application is using a quantum dot enhancement film ("QDEF") layer to improve the LED backlighting in LCD TVs. In this application, light from a blue LED backlight is converted by quantum dots to relatively pure red and green. This combination of blue, green and red light incurs less blue-green crosstalk and light absorption in

the color filters after the LCD screen, thereby increasing useful light throughput and providing a better color gamut.

30. The QDEF layer is able to replace a diffuser used in traditional LCD backlight units.

31. The use of quantum dots to produce monochromatic red, green and blue light is an improvement over traditional LCD backlight units which fed a blue LED through a yellow filter to create white light which was then passed through red, green and blue color filters.

THE ACCUSED PRODUCTS

32. The Accused Products are products which utilize LED-backlit LCD display panels.

33. The Accused Products are distinguishable into two categories. Products which utilize display panels containing one or more QDEF layers ("QDEF Accused Products") and products which utilize display panels that do not contain QDEF layers ("Non-QDEF Accused Products"). The QDEF Accused Products are further distinguishable into two subcategories. QDEF Accused Products which are direct-lit, in that they use an LED array on the back side of the panel ("Direct-lit QDEF Accused Products") and QDEF Accused Products which are edge-lit, in that they use LEDs around one or more edges of the panel ("Edge-lit QDEF Accused Products").

34. The Edge-lit QDEF Accused Products include, but are not limited to, the Acer X27, X35, XB3, and EI1 monitor lines.

35. The QDEF Accused Products include the Edge-lit QDEF Accused Products.

36. The Non-QDEF Accused Products include, but are not limited to, the following monitor lines: Z35, X25, X28, XB1, Z1, XB2, XB0, XN3, CG7, and X38.

37. The Non-QDEF Accused Products also include, but are not limited to, the following laptop computer lines: Helios 300, Triton 300 (excluding OLED models), Triton 500 SE, Helios 500, Helios 700, Triton 300, Triton 500, Triton 700, and Triton 900.

COUNT I

DEFENDANT'S INFRINGEMENT OF U.S. PATENT NO. 8,740,397

38. On June 3, 2014, United States Patent No. 8,740,397 entitled "Optical Cover Employing Microstructured Surfaces" was duly and legally issued after full and fair examination. SVVTI is the owner of all right, title, and interest in and to the patent by assignment, with full right to bring suit to enforce the patent, including the right to recover for past infringement damages and the right to recover future royalties, damages, and income. A true copy of the '397 patent is incorporated by reference herein and may be accessed at http://patft1.uspto.gov/netacgi/nph-Parser?patentnumber=8740397 or https://patents.google.com/patent/US8740397B2.

39. Defendant has directly infringed, and is continuing to directly infringe, literally or under the doctrine of equivalents, at least claims 1-3, 5, 7, 9-15, 17, 18, and 19 of the '397 patent by importing into the United States, making, using, selling, and/or offering for sale, at least, the Non-QDEF and Edge-lit QDEF Accused Products and other products containing LED-illuminated LCD displays, including computer monitors and laptops in the United States, in violation of 35 U.S.C. § 271(a).

40. The Non-QDEF and Edge-lit QDEF Accused Products use a backlighting/LCD panel assembly that covers the front side of the monitor and is used to redistribute light emitted by a series of light emitting diode (LED) sources disposed along an edge of the monitor. The backlighting/LCD panel assembly incorporates generally planar layer of optically transparent

material. The planar layer of optically transparent material (prismatic film) has at least one broad corrugated surface. The corrugated surface includes highly transparent optical windows distributed according to a predetermined pattern. For example, each prismatic ridge of the corrugated surface has a smooth horizontal surface at its tip which defines an optical window. The optical windows are configured for communicating light to or from the planar layer of optically transparent material (prismatic film). For example, the flat-top tips of the prismatic ridges are highly transparent and transmit light in either direction (to and from the prismatic film). The surface corrugations (prismatic ridges and furrows) are aligned parallel to a reference line (i.e., common longitudinal axis). The surface corrugations are configured to retroreflect at least some light propagating in the planar layer (prismatic film) by means of a total internal reflection. For example, the prismatic ridges and furrows receive light from the LGP disposed on the back side of the prismatic sheet and retroreflect (reflect light back towards its source with a minimum of scattering) at least on-axis light rays using double reflection from opposite sidewalls of the prismatic ridges.

COUNT II

DEFENDANT'S INFRINGEMENT OF U.S. PATENT NO. 9,678,321

41. On June 13, 2017, United States Patent No. 9,678,321 entitled "Light Trapping Optical Structure" was duly and legally issued after full and fair examination. SVVTI is the owner of all right, title, and interest in and to the patent by assignment, with full right to bring suit to enforce the patent, including the right to recover for past infringement damages and the right to recover future royalties, damages, and income. A true copy of the '321 patent is incorporated by reference herein and may be accessed at http://patft1.uspto.gov/netacgi/nph-Parser?patentnumber=9678321 or https://patents.google.com/patent/US9678321B2.

42. Defendant has directly infringed, and is continuing to directly infringe, literally or under the doctrine of equivalents, at least claims 1, 2, 4-7, 9, 13, and 15-18 of the ’321 patent by importing into the United States, making, using, selling, and/or offering for sale, at least, the Edge-lit QDEF Accused Products and other products containing LED-illuminated LCD displays, including computer monitors and laptops in the United States, in violation of 35 U.S.C. § 271(a).

43. The Edge-lit QDEF Accused Products use an optical structure, specifically, a backlighting/LCD panel assembly. The LCD/backlighting panel assembly includes a layer of optically transmissive material (LGP). The LGP is formed by a plastic sheet made from a highly transmissive material (such as optical-grade acrylic). The LGP is defined by a pair of opposing broad area surfaces extending parallel to each other. The LCD/backlighting panel assembly includes an optically absorptive layer disposed in contact with the second surface (e.g., front surface of the LGP) and in an energy exchange relationship with the layer of optically transmissive material (LGP). The LCD/backlighting panel assembly contains a plurality of light deflecting elements distributed within the layer of optically transmissive material (LGP). For example, LGP has a large number of microstructures formed in its back surface. Each light deflecting element (microstructure of the back surface of LGP and/or rounded ridge of the front surface of LGP) deflects at least some light propagating transversally through the layer of optically transmissive material (LGP) away from a surface normal (e.g., a normal to the front or back surface of the LGP) at angles above a predefined critical angle (e.g., a sufficiently high angle with respect to the surface normal). The predefined critical angle is selected to result in a multiple transversal passage of light through said optically absorptive layer. For example, QDEF and the phosphor layer of back reflector absorb only a portion of the blue light in a single pass and it takes more than one pass to absorb and convert the sufficient quantity of the blue light.

COUNT III

DEFENDANT'S INFRINGEMENT OF U.S. PATENT NO. 10,797,191

44. On October 6, 2020, United States Patent No. 10,797,191 entitled "Light Trapping Optical Structure" was duly and legally issued after full and fair examination. SVVTI is the owner of all right, title, and interest in and to the patent by assignment, with full right to bring suit to enforce the patent, including the right to recover for past infringement damages and the right to recover future royalties, damages, and income. A true copy of the '191 patent is incorporated by reference herein and may be accessed at http://patft1.uspto.gov/netacgi/nph-Parser?patentnumber=10797191 or https://patents.google.com/patent/US10797191B2.

45. Defendant has directly infringed, and continues to directly infringe, literally or under the doctrine of equivalents, at least claims 1, 3, 5, 7, 8, and 10-19 of the '191 patent by importing into the United States, making, using, selling, and/or offering for sale, at least, the Edge-lit QDEF Accused Products and other products containing LED-illuminated LCD displays, including computer monitors, tablets, and handheld devices, in the United States, in violation of 35 U.S.C. § 271(a).

46. The Edge-lit QDEF Accused Products use an optical article for redistributing light, specifically, a backlighting/LCD (Liquid Crystal Display) panel assembly that covers the front side of the monitor and is used to redistribute light emitted by a series of light emitting diode (LED) sources disposed along an edge of the monitor. The LCD/backlighting panel assembly includes a rectangular optically transmissive sheet configured to guide light using total internal reflection. For example, LCD/backlighting panel assembly includes a light guide plate (LGP) that guides light using total internal reflection (TIR). The LGP has a first broad-area surface (front surface) and a second broad-area surface (back surface) which is parallel to the

first broad-area surface. The thickness of the LGP is between a fraction of a millimeter and several millimeters. For example, the thickness of the LGP is 3 mm. Also, the length and width dimensions of the LGP is 100 millimeters or more. The backlighting/LCD panel assembly includes a strip of light emitting diodes (LEDs) coupled to an edge of the LGP. The LEDs act as artificial light source and the light emitted by the LEDs illuminates the LGP. The backlighting/LCD panel assembly includes a plurality of rounded ridges formed in the first broad-area surface and extending along parallel straight lines between two opposing edges of the optically transmissive sheet. For example, the LGP includes a plurality of rounded ridges formed in the first broad-area surface (front surface) and that extends along the parallel straight lines between two opposing edges of the LGP. The backlighting/LCD panel assembly includes a two-dimensional pattern of discrete cavities formed in the second broad-area surface of the LGP. For example, the LGP has a large number of microstructures formed in its back surface. The microstructures include cavities. The backlighting/LCD panel assembly includes a light converting layer extending parallel to the optically transmissive sheet (LGP) and disposed in an energy receiving relationship with respect to the optically transmissive sheet. For example, the backlighting/LCD panel assembly includes a Quantum Dot Enhancement Film (QDEF) which acts as a light converting layer. The QDEF includes a first transparent wall, a second transparent wall, and a partially transmissive layer sandwiched between the first and second transparent walls. For example, the QDEF includes an active layer, which is partially transmissive layer, and which is sandwiched between two transparent walls. The backlighting/LCD panel assembly includes a reflective back cover which is approximately coextensive with the optically transmissive sheet (LGP) and the light converting layer (QDEF). For example, the backlighting/LCD panel assembly includes a back reflector which is

coextensive with the LGP and the QDEF. The backlighting/LCD panel assembly includes a total internal reflection surface located at a distance from the optically transmissive sheet and configured to reflect light using total internal reflection. For example, the backlighting/LCD panel assembly includes a composite prism sheet which is located at a distance from the LGP. The composite prism sheet includes linear grooves that are configured to deflect light using total internal reflection, depending on the propagation angles of light rays passing through the prism sheet. At least one of the rounded ridges defines a cylindrical lens having an arcuate cross-sectional profile. For example, each of the rounded ridges has a convex arcuate profile in a transverse cross-section, and defines a cylindrical lens having a focal distance. The focal distance can be determined, for example, using a formula based on the radius of curvature of the rounded ridge. The area occupied by each of the discrete cavities is less than an area occupied by each of the rounded ridges. For example, each microstructure containing the discrete cavity has a radius of less than 35 mm (micrometers). On the other hand, each rounded ridge has a radius of more than 170 mm and length of several hundred thousand micrometers, yielding an area of at least several tens millions square micrometers. The partially transmissive layer (active layer of QDEF) comprises light absorbing elements distributed within an optically transmissive material and configured for absorbing and converting light emitted by the artificial light source. Specifically, the active layer of QDEF includes a plurality of quantum dots embedded into an optically transmissive material. The quantum dots are used to absorb blue light emitted by the LEDs and to re-emit the absorbed light as light in other colors[6] (e.g., red and/or green colors). A quantum dot only emits one color, which is determined by its size.

COUNT IV

DEFENDANT'S INFRINGEMENT OF U.S. PATENT NO. 10,838,135

47. On November 17, 2020, United States Patent No. 10,838,135 entitled "Edge-Lit Waveguide Illumination Systems Employing Planar Arrays of Linear Cylindrical Lenses" was duly and legally issued after full and fair examination. SVVTI is the owner of all right, title, and interest in and to the patent by assignment, with full right to bring suit to enforce the patent, including the right to recover for past infringement damages and the right to recover future royalties, damages, and income. A true copy of the '135 patent is incorporated by reference herein and may be accessed at http://patft1.uspto.gov/netacgi/nph-Parser?patentnumber=10838135 or https://patents.google.com/patent/US10838135B2.

48. Defendant has directly infringed, and are continuing to directly infringe, literally or under the doctrine of equivalents, at least claims 1, 2, 5, 6, 8, 9, 11, 13, 16, 17 and 24 of the '135 patent by importing into the United States, making, using, selling, and/or offering for sale, at least, the QDEF and Non-QDEF Accused Products and other products containing LED-illuminated LCD displays, including computer monitors, tablets, and handheld devices, in the United States, in violation of 35 U.S.C. § 271(a).

49. The QDEF and Non-QDEF Accused Products use an edge-lit waveguide illumination system, specifically, a display screen. The display screen incorporates a liquid crystal display (LCD) which is backlit using a backlighting panel assembly (backlight). The backlight uses multiple light-emitting diodes (LEDs) which are placed along an edge of the visible area of the display and provide a light source. Light emitted by the LEDs is redistributed within the backlight using an optical waveguide[1] which is the light guide plate (LGP). The edge-lit waveguide illumination system (display screen) comprises an optically transmissive plate having a flexible monolithic structure, a front surface, an opposing back surface extending parallel to the front surface, a first edge, a second edge extending parallel to the first edge, a third

edge extending perpendicular to the first and second edges, and a fourth edge extending parallel to the third edge. For example, the backlight assembly incorporates a flexible light guide plate (LGP) which is an optically transmissive plate and has the shape of a rectangular sheet with front and back surfaces and four edges. The first edge is the light input edge where the LGP receives light. The distance between the first and second edges is at least 40 times greater than the thickness of the optically transmissive sheet, and the distance between the third and fourth edges is at least 20 times greater than the thickness of the optically transmissive plate. For example, the LGP has a thickness of 3 mm, which is less than 20 times the width of the LGP and less than 40 times the length of LGP. The display screen incorporates a plurality of light emitting diodes (LEDs) which are optically coupled to the first edge and configured to emit a divergent light beam towards the first edge. For example, LEDs are positioned along the light input edge of the LGP and configured to emit light towards the LGP. The display screen also incorporates a lenticular array of linear cylindrical lenses formed in the front surface and extending along straight parallel lines between two opposing edges of the optically transmissive plate. For example, the front surface of the optically transmissive plate (LGP) contains an array of linear cylindrical lenses (rounded ridges). Each of the rounded ridges of the front surface has the shape of a section cylinder, and the ridges are parallel to each other and form a regular pattern in the front surface of the optically transmissive plate. The display screen also incorporates a plurality of discrete light extracting surface relief features formed in the back surface of the optically transmissive plate (LGP) according to a two-dimensional pattern such that each of the plurality of the discrete light extracting surface relief features are separated from one another and from each of the first, second, third, and fourth edges by smooth and planar portions of the back surface. For example, the back surface of the optically transmissive plate (LGP) contains a

plurality of discrete light extracting surface relief features (microstructures). The microstructures contain cavities and protrusions. The microstructures are distributed over the back surface of the LGP according to a randomized two-dimensional pattern and are spaced apart from each other by non-textured planar portions. The display screen also incorporates a reflective surface approximately coextensive with the optically transmissive plate and positioned on a back side of the optically transmissive plate. For example, the reflector is positioned below the back surface of the LGP. The display screen incorporates several light diffusing layers approximately coextensive with the optically transmissive plate. The diffusers are positioned above the front surface of the LGP. The optically transmissive plate (LGP) is configured to receive light on the first edge, guide the light received on the first edge towards the second edge using optical transmission and total internal reflection, and distribute the light received on the first edge from both the front and back surfaces towards divergent directions. For example, the optically transmissive plate (LGP) receives light from the LEDs on the optically transmissive plate's light input edge. The optically transmissive sheet guides the light received towards the second edge through optical transmission and application of principles of total internal reflection (TIR) mechanism, and distributes the light received towards divergent directions. The optically transmissive plate (LGP) is configured to receive light on the front surface and propagate the light towards the back surface. For example, a composite prism sheet is positioned above the front surface of the LGP and is configured to reflect some light towards the front surface of the LGP to be propagated towards the back surface of the LGP. The area occupied by each of the linear cylindrical lenses is substantially greater than an area occupied by each of the plurality of the discrete light extracting surface relief feature. The area of each light deflecting element (microstructure) is less than one tenth of a millimeter. The light receiving area (aperture) of each

elongated cylindrical lens (rounded ridge) is at least several square millimeters or more. Thus, the area of each of the linear cylindrical lenses is substantially greater than an area occupied by each of the plurality of the discrete light extracting surface relief features. The plurality of discrete light extracting surface relief features is configured to disrupt total internal reflection at the back surface and extract at least some light propagated in the optically transmissive plate towards the reflective surface. For example, the microstructures disrupt the smooth, non-textured surface of the back surface and are specifically designed to extract light from LGP such that at least some of the light rays exit from the LGP towards the reflector positioned below the LGP.

50. Defendant has directly infringed, and continues to directly infringe, literally or under the doctrine of equivalents, at least claims 19, 22 and 23 of the ’135 patent by importing into the United States, at least, the QDEF and Non-QDEF Accused Products and other products containing LED-illuminated LCD displays, including computer monitors, tablets, and handheld devices, in violation of 35 U.S.C. § 271(g).

COUNT V

DEFENDANT’S INFRINGEMENT OF U.S. PATENT NO. 10,868,205

51. On October 6, 2020, United States Patent No. 10,868,205 entitled “Light Converting System Employing Planar Light Trapping and Light Absorbing Structures” was duly and legally issued after full and fair examination. SVVTI is the owner of all right, title, and interest in and to the patent by assignment, with full right to bring suit to enforce the patent, including the right to recover for past infringement damages and the right to recover future royalties, damages, and income. A true copy of the ’205 patent is incorporated by reference herein and may be accessed at http://patft1.uspto.gov/netacgi/nph-Parser?patentnumber=10868205 or https://patents.google.com/patent/US10868205B2.

52. Defendant has directly infringed, and continues to directly infringe, literally or under the doctrine of equivalents, at least claims 1-6, 11-17, and 19 of the ’205 patent by importing into the United States, making, using, selling, and/or offering for sale, at least, the Edge-lit QDEF Accused Products and other products containing LED-illuminated LCD displays, including computer monitors, tablets, and handheld devices, in the United States, in violation of 35 U.S.C. § 271(a).

53. The Edge-lit QDEF Accused Products use a light converting optical system, specifically, a display screen. The display screen incorporates a liquid crystal display (LCD) which is backlit using a backlighting assembly (backlight). The backlight uses multiple light-emitting diodes (LEDs) which are placed along an edge of the visible area of the display and provide a light source. The LEDs emit blue light, a portion of which is absorbed and converted to other wavelengths within the backlight. The LCD/backlighting panel assembly of the display screen includes a first broad-area reflective surface comprising a plurality of linear light deflecting surface relief structures and configured for reflecting light using a total internal reflection. For example, the display screen includes a composite prism sheet which has a plurality of linear light deflecting surface relief features that are configured to deflect light using total internal reflection depending on the propagation angles of light rays passing through the composite prism sheet. Specifically, each surface relief feature of the prism sheet has a pair of facets inclined at a 45°. Each facet reflects light that arrives from a perpendicular direction using total internal reflection. The LCD/backlighting panel assembly of the display screen includes a second broad-area reflective surface extending parallel to and being substantially coextensive with the first broad-area reflective surface. For example, the LCD/backlighting panel includes a back reflector which extends parallel to the composite prism sheet and is substantially

coextensive with the composite prism sheet. The LCD/backlighting panel assembly includes a generally planar photoresponsive layer disposed between the first and second broad-area reflective surfaces. For example, a Quantum Dot Enhancement Film (QDEF) is disposed between the composite prism sheet and the reflector. The QDEF contains an active layer which is responsive to blue light emitted by the LEDs of the LCD/backlighting panel assembly. The photoresponsive layer includes quantum dots distributed within an optically transmissive material. For example, QDEF includes an active layer which is distributed with quantum dots. The quantum dots are used to absorb blue light emitted by the LEDs and to re-emit the absorbed light energy as light of other color. At least some of the quantum dots are configured to absorb and convert light selectively such that at least a substantial portion of light in a first spectral range is absorbed and converted and light in a second spectral range is transmitted. For example, the active layer of QDEF includes "green" quantum dots that absorb and convert blue light (first spectral range) into green (second spectral range), and "red" quantum dots that absorb and convert blue light into red (second spectral range). Additionally, QDEF transmits at least some light without absorption in a single pass. The LCD/backlighting assembly of the display screen contains LEDs that are used as a light source. The LEDs are a monochromatic light source (e.g., emitting light only in one color) which is configured to emit light in the first spectral range (the LEDs emit light in blue color when powered on). The LCD/backlighting assembly of the display screen includes a planar array of lenses distributed over an area of the photoresponsive layer and disposed on a light path between the light source and the photoresponsive layer. For example, the LCD/backlighting assembly includes a light guiding plate (LGP), the front surface of which has a planar array of lenses. The LGP is positioned over an area of the QDEF and receives light from the LEDs. The surface relief structures of the composite prism sheet have facets inclined at a

45°. Each facet reflects light that arrives on it at a sufficiently high angle away from the original propagation direction. The thickness of the photoresponsive layer (QDEF) is less than a minimum thickness sufficient for absorbing substantially all received light in a single pass at normal incidence. For example, QDEF transmits at least some light without absorption in a single pass. The first and second broad-area reflective surfaces form a light trapping structure configured to provide for multiple transverse light passage through the photoresponsive layer. For example, at least a portion of the light emitted from the LEDs passes through the QDEF, and gets reflected from the composite prism sheet back to the QDEF. Similarly, at least a portion of the light entering QDEF from the composite prism sheet escapes the QDEF (since QDEF absorbs only a portion of light in a single pass) and then gets reflected back to it from the reflector. Thus, the composite prism sheet and the reflector form a light trapping structure configured to provide multiple transverse light passage through the QDEF.

54. Defendant has directly infringed, and continues to directly infringe, literally or under the doctrine of equivalents, at least independent claim 20 of the ’205 patent by importing into the United States, at least, the Edge-lit QDEF Accused Products and other products containing LED-illuminated LCD displays, including computer monitors, tablets, and handheld devices, in violation of 35 U.S.C. § 271(g).

FURTHER ASSERTIONS INVOLVING ALL CLAIMS

55. The Asserted Patents are valid and enforceable.

56. Defendant has had knowledge of the Asserted Patents since, at least, January 29, 2021, when Acer received SVVTI’s letter disclosing each of these patents, and identifying several of Acer’s products utilizing claims of such patents which were also identified in SVVTI’s letter.

57. Alternatively, Defendant has had knowledge of the Asserted Patents since, at least, the filing date of the original complaint in this action.

58. Defendant's affirmative acts of selling the Accused Products, causing the Accused Products to be sold, advertised, offered for sale, and/or distributed, and providing instruction manuals for the Accused Products have induced and continue to induce Defendant's customers, and/or end-users to use the Accused Products in their normal and customary way to infringe the Asserted Patents. For example, it can be reasonably inferred that end-users will use the infringing products, which will cause the end-users to use the elements that are the subject of the claimed invention. Defendant specifically intended and was aware that these normal and customary activities would infringe the Asserted Patents. In addition, Defendant provides marketing and/or instructional materials, such as user guides, that specifically teach end-users to use the Accused Products in an infringing manner. By providing such instructions, Defendant knows (and has known), or was willfully blind to the probability that its actions have, and continue to, actively induce infringement. By way of example only, Defendant has induced infringement and continue to induce infringement of, in addition to other claims, at least the specific claims identified above of the Asserted Patents by selling in the United States, without SVVTI's authority, infringing products and providing instructional materials. These actions have induced and continue to induce the direct infringement of the Asserted Patents by end-users. Defendant performed acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the Asserted Patents and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. Upon information and belief, Defendant specifically intended (and intends) that its actions would result in infringement of at least the specific claims identified above of the Asserted Patents, or

subjectively believed that its actions would result in infringement of the Asserted Patents but took deliberate actions to avoid learning of those facts, as set forth above. Upon information and belief, Defendant knew of the Asserted Patents and knew of its infringement, including by way of this lawsuit as described above.

59. Defendant's infringement has been and continues to be willful and deliberate. Upon information and belief, Defendant deliberately infringed the Asserted Patents and acted recklessly and in disregard to the Asserted Patents by making, having made, using, importing, and offering for sale products that infringe the Asserted Patents. Upon information and belief, the risks of infringement were known to Defendant and/or were so obvious under the circumstances that the infringement risks should have been known. Upon information and belief, Defendant has no reasonable non-infringement theories. Upon information and belief, Defendant has not attempted any design/sourcing change to avoid infringement. Defendant has acted despite an objectively high likelihood that its actions constituted infringement of the Asserted Patents. In addition, this objectively-defined risk was known or should have been known to Defendant. Upon information and belief, Defendant has willfully infringed and/or continues to willfully infringe the Asserted Patents. Defendant exhibited egregious behavior beyond typical infringement in that, despite being aware of its infringement, defendant did not develop any non-infringement theories, did not attempt any design or sourcing change, and did not otherwise cease its infringement.

60. To the extent any marking or notice was required by 35 U.S.C. § 287, Plaintiff has complied with the applicable marking and/or notice requirements of 35 U.S.C. § 287.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury for all issues so triable.

PRAYER

WHEREFORE, Plaintiff prays for judgment that:

1. Defendant has infringed and continues to infringe, one or more claims of the Asserted Patents;

2. Defendant be ordered to pay damages caused to Plaintiff by Defendant's unlawful acts of infringement;

3. Defendant's acts of infringement have been, and are, willful;

4. Plaintiff recover actual damages under 35 U.S.C. § 284;

5. Plaintiff be awarded supplemental damages for any continuing post-verdict infringement up until final judgment;

6. Plaintiff be awarded a compulsory ongoing royalty;

7. Plaintiff be awarded an accounting of damages;

8. Plaintiff be awarded enhanced damages for willful infringement as permitted under the law;

9. A judgment and order requiring Defendant to pay to Plaintiff pre-judgment and post-judgment interest on the damages awarded, including an award of pre-judgment interest, pursuant to 35 U.S.C. § 284, from the date of each act of infringement by Defendant to the day a damages judgment is entered, and a further award of post-judgment interest, pursuant to 28 U.S.C. § 1961, continuing until such judgment is paid, at the maximum rate allowed by law;

10. An award to Plaintiff of the costs of this action and its reasonable attorneys' fees pursuant to 35 U.S.C. §285; and

11. Such other and further relied as the Court deems just and equitable.

DATED: June 21, 2022

Respectfully submitted,

/s/*Robert D. Katz*

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