

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

PARKERVISION, INC.,

Plaintiff,

v.

TCL INDUSTRIES HOLDINGS CO.,
LTD., TCL ELECTRONICS
HOLDINGS LTD., SHENZHEN TCL
NEW TECHNOLOGY CO., LTD., TCL
KING ELECTRICAL APPLIANCES
(HUIZHOU) CO., LTD., TCL MOKA
INT'L LTD., and TCL MOKA
MANUFACTURING S.A. DE C.V.,

Defendants.

Case No. 6:22-cv-01158

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff ParkerVision, Inc. (“ParkerVision”), by and through its undersigned counsel, files this Complaint against Defendants TCL Industries Holdings Co., Ltd., TCL Electronics Holding Ltd. (f/k/a TCL Multimedia Technology Holdings Ltd.), Shenzhen TCL New Technology Co., Ltd., TCL King Electrical Appliances (Huizhou) Co., Ltd., TCL Moka Int’l Ltd., and TCL Moka Manufacturing S.A. de C.V. (collectively, “TCL” or “Defendants”) for patent infringement of United States Patent Nos. 6,879,817 and 9,288,100 (collectively, the “patents-in-suit”) and alleges as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.*

PARTIES

2. Plaintiff ParkerVision is a Florida corporation with its principal place of business at 4446-1A Hendricks Avenue, Suite 354, Jacksonville, Florida 32207.

3. Defendant TCL Industries Holdings Co., Ltd. (“TCL Industries”) is a Chinese corporation with a principal place of business located at 22/F, TCL Technology Building, 17 Huifeng 3rd Road, Huizhou, Guangdong, 516000 P.R. China.

4. Defendant TCL Electronics Holdings Ltd. (f/k/a TCL Multimedia Technology Holdings Ltd.) (“TCL Electronics”) is a limited liability company incorporated in the Cayman Islands with a registered address at P.O. Box 309, Uglan House, Grand Cayman, KY1-1104, Cayman Islands. TCL Electronics has a principal place of business at 7/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Sha Tin, New Territories, Hong Kong.

5. Defendant Shenzhen TCL New Technology Co., Ltd. (“TCL New Technology”) is a foreign corporation duly organized under the laws of the People’s Republic of China with a principal place of business located at 9/F, Building D4, TCL International E City, No. 1001, Zhongshan Park Road, Nanshan District, Shenzhen, Guangdong, 518067 P.R. China.

6. Defendant TCL King Electrical Appliances (Huizhou) Co., Ltd. (“TCL King”) is a foreign corporation duly organized under the laws of the People’s Republic of China with a principal place of business located at No. 78 Zhongkai Development Zone, Huizhou, 516006 P.R. China.

7. Defendant TCL Moka Int’l Ltd. (“TCL Moka”) is a foreign corporation duly organized under the laws of Hong Kong with a principal place of business located at 7/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Sha Tin, New Territories, Hong Kong.

8. Defendant TCL Moka Manufacturing, S.A. de C.V. (“TCL Moka Manufacturing”) is a Mexican corporation with a principal place of business located at Camino Vecinal 2472, colonia, Canon del Padre, Tijuana Baja California.

9. On information and belief, TCL Industries is a holding company and the ultimate corporate parent of Defendants TCL Electronics, TCL New Technology, TCL King, TCL Moka, and TCL Moka Manufacturing. *See* TCL Electronics Holding Limited Annual Report 2019 (available at <https://doc.irasia.com/listco/hk/tclelectronics/annual/2019/ar2019.pdf>) (Exhibit 1).

1. CORPORATE AND GROUP INFORMATION

TCL Electronics Holdings Limited (the “Company”) is a limited liability company incorporated in the Cayman Islands. The registered address of the Company is P.O. Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands. The principal place of business of the Company is located at 7th Floor, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong.

During the year, the Group and its subsidiaries (collectively referred to as the “Group”) were mainly involved in the manufacture and sale of colour television (“TV”) sets, smart audio-visual (“Smart AV”) and smart home products and providing Internet platform operating services.

In the opinion of the directors, T.C.L. Industries Holdings (H.K.) Limited (“T.C.L. Industries (H.K.)”), a company incorporated in Hong Kong, is the immediate holding company of the Company. In the first quarter of 2019, a restructuring occurred whereby TCL Technology Group Corporation (“TCL Technology”, formerly known as TCL Corporation) spun off, among others, all its equity interests in T.C.L. Industries (H.K.) transferred to TCL Industries Holdings Co., Limited (“TCL Holdings”), a limited liability company registered in the People’s Republic of China (the “PRC”). Accordingly, the ultimate holding company of the Company has changed to TCL Holdings following completion of such restructuring. As the major shareholders of TCL Holdings are the key management of TCL Technology, TCL Technology remained a related party of the Group.

Ex. 1 at p. 134

10. On information and belief, TCL Electronics is a parent of TCL’s television business group, comprising subsidiaries that manufacture, market, offer for sale, and sell television products, including the accused infringing products, in the United States, the State of Texas, and this judicial district.

Leading the Smart Display Industry

Having been developing overseas markets for over 20 years, TCL Electronics took the lead in implementing a global development strategy. Leveraging its vertically integrated supply chain, the Company is becoming a leading player in global consumer electronics industry. In the first half of 2021, the global sales volume of TCL smart screen reached 11.27 million sets, a year-on-year increase of 11.8%, among which, sales in overseas markets increased by 22.2% year-on-year. The market share by shipment of TCL smart screen in the global TV market increased by 1.0 percentage point to 11.6%, ranking firmly among the top three in the world¹. Sales

<http://electronics.tcl.com/en/about/overview.php>

11. TCL New Technology is a “principal subsidiary” of TCL Electronics with “principal activities” of “[m]anufacture and sale of TV products.” *See* Ex. 1 at p. 135. TCL King is a “principal subsidiary” of TCL Electronics with “principal activities” of “[m]anufacture and sale of TV products and trading of components.” *See id.* at p. 136. TCL Moka Manufacturing is a “principal subsidiary” of TCL Electronics with “principal activities” of “manufacture and sale of TV products.” *See id.* at p. 137. TCL Moka is a “principal subsidiary” of TCL Electronics and, on information and belief, is similarly involved in the manufacture, sale, and trading of TCL television products and components. *See id.* at p. 138.

12. On information and belief, Defendants comprise a “vertically integrated industrial chain,” and thus act in concert to design, manufacture, sell, offer for sale, import, distribute, advertise, and/or otherwise promote the accused infringing products in the United States, the State of Texas, and this judicial district. *See, e.g.*, Ex. 1; TCL Electronics Holding Limited Interim Report 2020 (available at <https://doc.irasia.com/listco/hk/tclelectronics/interim/2020/intrep.pdf>) (Exhibit 2) (“Benefitting from its leading positions in integrated supply chain, global channels, production capacity layout, hardware, software and content, TCL Electronics, as the brand driving force of the entire TCL display industry chain and a user-centric company, managed to expand its market share amid negative trend...”); *see also* <http://electronics.tcl.com/en/about/overview.php>.

13. In 2019, TCL Electronics also entered into a number of “connected transactions” with TCL Industries in furtherance of its mutual business interests and goals, including, but not limited to, (i) a Master Rental (2019-2021) Agreement; (ii) a Master Sale and Purchase (2019-2021) Agreement; and (iii) a Master Services (2019-2021) Agreement. *See* Ex. 1 at p. 109-110.

14. On information and belief, Defendants are operated as a single business entity and/or in concert with each other to sell, offer to sell, import, market, advertise, and/or otherwise promote TCL TVs, including the accused infringement products, in the United States, the State of Texas and this judicial district. On information and belief, the Defendants share directors, executives and/or employees. For example, Mr. Li Dongsheng is an Executive Director of TCL Electronics and a Director of TCL Industries. Ex. 1 at p. 36. Mr. Wang Cheng is the CEO and an Executive Director of TCL Electronics and the CEO of TCL Industries. *Id.* at p. 37.

15. On information and belief, TCL Industries controls the business decisions of TCL Electronics and its subsidiaries including, but not limited to, TCL New Technology, TCL King, TCL Moka, and TCL Moka Manufacturing.

JURISDICTION AND VENUE

16. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because the action arises under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.*

17. TCL is subject to this Court’s personal jurisdiction in accordance with due process and/or the Texas Long-Arm Statute. *See* Tex. Civ. Prac. & Rem. Code §§ 17.041 *et seq.*

18. This Court has personal jurisdiction over TCL because TCL has sufficient minimum contacts with this forum as a result of business conducted within the State of Texas and this judicial district. In particular, this Court has personal jurisdiction over TCL because,

inter alia, TCL, on information and belief, has substantial, continuous, and systematic business contacts in this judicial district, and derives substantial revenue from goods provided to individuals in this judicial district.

19. TCL has purposefully availed itself of the privileges of conducting business within this judicial district, has established sufficient minimum contacts with this judicial district such that it should reasonably and fairly anticipate being hauled into court in this judicial district, has purposefully directed activities at residents of this judicial district, and at least a portion of the patent infringement claims alleged in this Complaint arise out of or are related to one or more of the foregoing activities.

20. This Court has personal jurisdiction over TCL because TCL (directly and/or through its subsidiaries, affiliates, or intermediaries) has committed and continues to commit acts of infringement in this judicial district in violation of at least 35 U.S.C. § 271(a). In particular, on information and belief, TCL uses, sells, offers for sale, imports, markets, advertises, and/or otherwise promotes the accused infringing products in the United States, the State of Texas, and this judicial district.

21. TCL Electronics' 2020 interim financial report ("2020 interim financial report") discusses the shipment of TCL TVs in the North American markets, which includes the United States, and market share of TCL TVs in the North American markets, which includes the United States. Ex. 2 at p. 4, 7.

22. TCL Electronics' 2022 interim financial report ("2022 interim financial report") also discusses sales and market share in the United States.

- North American Markets: although the TV market size in North America decreased due to demand in advance from the Covid-19 pandemic, the Group's smart screen business in North American markets made steady progress, with a 0.9 percentage points increase in gross profit margin year-on-year in the first half of 2022 and leading in market share. For the six months ended 30 June 2022, the market share of TCL smart screen by sales volume ranked No.3 in the U.S. and Canada, and rose to No.4 in Mexico (Source: NPD^B);

See Ex. 3, <https://doc.irasia.com/listco/hk/tcelelectronics/interim/2022/intrep.pdf> at 7. On information and belief, sales of TCL TVs in the United States make up a majority of TCL's revenue from the North American markets.

23. The 2022 interim financial report shows 2021 and 2022 revenue which includes sales of television (large-sized display) in North American including the United States. On information and belief, this revenue includes revenue from the sales of the accused infringing products.

Disaggregated revenue information for revenue from contracts with customers								
For the six months ended 30 June 2022								
Segments	Large-sized display (unaudited) HK\$'000	Small and medium-sized display (unaudited) HK\$'000	Smart commercial display (unaudited) HK\$'000	Internet business (unaudited) HK\$'000	All-category marketing (unaudited) HK\$'000	Photovoltaic business (unaudited) HK\$'000	Smart home, smart connective devices and others (unaudited) HK\$'000	Total (unaudited) HK\$'000
Types of goods or services								
Sale of goods	19,659,950	7,062,502	248,538	73,423	4,247,585	172,199	1,346,372	32,810,569
Video-on-demand services	-	-	-	262,869	-	-	-	262,869
Advertising, vertical application and other new businesses	-	-	-	605,818	-	-	-	605,818
Total revenue from contracts with customers	19,659,950	7,062,502	248,538	942,110	4,247,585	172,199	1,346,372	33,679,256
Geographical markets								
Mainland China	6,318,720	29,511	127,871	814,374	2,535,773	172,199	456,748	10,455,196
Europe	2,329,455	1,038,346	17,959	-	172,507	-	486,073	4,044,340
North America	4,283,909	4,410,100	102,708	6,201	51,990	-	191,391	9,046,299
Emerging markets	6,727,866	1,584,545	-	121,535	1,487,315	-	212,160	10,133,421

Disaggregated revenue information for revenue from contracts with customers (continued)

For the six months ended 30 June 2021

Segments	Large-sized display (unaudited) HK\$'000 (restated)	Small and medium-sized display (unaudited) HK\$'000 (restated)	Smart commercial display (unaudited) HK\$'000 (restated)	Internet business (unaudited) HK\$'000	All-category marketing (unaudited) HK\$'000	Smart home, smart connective devices and others (unaudited) HK\$'000 (restated)	Total (unaudited) HK\$'000 (restated)
Types of goods or services							
Sale of goods	23,085,580	6,069,136	145,157	98,869	3,352,343	1,560,860	34,311,945
Video-on-demand services	-	-	-	182,149	-	-	182,149
Advertising, vertical application and other new businesses	-	-	-	439,754	-	-	439,754
Total revenue from contracts with customers	23,085,580	6,069,136	145,157	720,772	3,352,343	1,560,860	34,933,848
Geographical markets							
Mainland China	6,428,749	27,427	145,157	599,930	1,724,033	552,610	9,477,906
Europe	3,158,733	1,579,477	-	-	171,545	695,047	5,604,802
North America	6,860,276	2,014,345	-	10,157	288,280	280,534	10,362,601
Emerging markets	6,628,822	1,547,887	-	110,685	1,168,476	32,669	9,488,539

Id. at 39-40.

24. The 2020 interim financial report discusses the rise in logistics costs in North American markets, which includes the United States, on information and belief, related to TCL TVs. Ex. 2 at 16. With regard to TCL TVs, the 2020 interim financial report discusses that business in North America with low gross profit (low expenses) grew fast in the second quarter 2020. Id. at 23. The 2020 interim financial report discusses the sales volume of TCL TVs in North America, which includes the United States, for the first quarters of 2018, 2019 and 2020. Id. at 30.

25. The 2020 interim financial report reports revenue from the North American market, which includes the United States, for TCL TVs in 2019 and 2020. Id. at pp. 51-52. On information and belief, this revenue includes revenue from the sales of the accused infringing products.

Disaggregated revenue information from continuing operations for revenue from contracts with customers

For the six months ended 30 June 2020

Segments	TV and other products (unaudited) HK\$'000	Internet business (unaudited) HK\$'000	Total (unaudited) HK\$'000
Types of goods or services			
Sale of goods	16,756,021	25,670	16,781,691
Video-on-demand services	–	130,336	130,336
Advertising, value-added and other services	–	365,052	365,052
<hr/>			
Total revenue from contracts with customers	16,756,021	521,058	17,277,079
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Geographical markets			
Mainland China	5,412,667	396,574	5,809,241
Europe	1,462,955	–	1,462,955
North America	5,381,025	8,837	5,389,862
Emerging markets	4,499,374	115,647	4,615,021
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Total revenue from contracts with customers	16,756,021	521,058	17,277,079
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Timing of revenue recognition			
Goods transferred at a point in time	16,756,021	25,670	16,781,691
Services transferred over time	–	130,336	130,336
Services transferred at a point in time	–	365,052	365,052
<hr/>			
Total revenue from contracts with customers	16,756,021	521,058	17,277,079

INTERIM RESULTS

5. REVENUE (continued)

Disaggregated revenue information from continuing operations for revenue from contracts with customers (continued)

For the six months ended 30 June 2019

Segments	TV and other products (unaudited) HK\$'000 (restated)	Internet business (unaudited) HK\$'000 (restated)	Total (unaudited) HK\$'000 (restated)
Types of goods or services			
Sale of goods	17,594,928	227	17,595,155
Video-on-demand services	–	30,379	30,379
Advertising, value-added and other services	–	199,072	199,072
Total revenue from contracts with customers	17,594,928	229,678	17,824,606
Geographical markets			
Mainland China	6,498,046	133,655	6,631,701
Europe	1,203,025	–	1,203,025
North America	6,333,731	14,807	6,348,538
Emerging markets	3,560,126	81,216	3,641,342
Total revenue from contracts with customers	17,594,928	229,678	17,824,606
Timing of revenue recognition			
Goods transferred at a point in time	17,594,928	227	17,595,155
Services transferred over time	–	30,379	30,379
Services transferred at a point in time	–	199,072	199,072
Total revenue from contracts with customers	17,594,928	229,678	17,824,606

26. TCL Electronics' 2019 annual financial report ("2019 financial report") discusses market share of TCL TVs in the North American markets, which include the United States. Ex. 1 at p. 13. The 2019 financial report discusses sales volume in North America, which includes the United States, and production capacity being sufficient to meet shipment demand in the North American markets, which include the United States. *Id.* at pp. 20, 22.

27. The 2019 financial report reports revenue from the North American market, which includes the United States, for TCL TVs in 2018 and 2019. *Id.* at pp. 189-190. On information and belief, this revenue includes revenue from the sales of the accused infringing products.

6. TURNOVER, OTHER REVENUE AND GAINS (CONTINUED)			
Revenue from contracts with customers			
<i>(i) Disaggregated revenue information</i>			
For the year ended 31 December 2019			
Segments	TV and other products HK\$'000	Internet business HK\$'000	Total HK\$'000
Type of goods or services			
Sale of goods	46,364,963	28,696	46,393,659
Video-on-demand services	–	121,030	121,030
Advertising, value-added and other services	–	476,450	476,450
Total revenue from contracts with customers	46,364,963	626,176	46,991,139
Geographical markets			
Mainland China	17,627,030	416,136	18,043,166
Europe	2,826,222	–	2,826,222
North America	10,973,204	37,838	11,011,042
Emerging Markets	7,706,011	172,202	7,878,213
Others	7,232,496	–	7,232,496
Total revenue from contracts with customers	46,364,963	626,176	46,991,139
Timing of revenue recognition			
Goods transferred at a point in time	46,364,963	28,696	46,393,659
Services transferred over time	–	121,030	121,030
Services transferred at a point in time	–	476,450	476,450
Total revenue from contracts with customers	46,364,963	626,176	46,991,139

6. TURNOVER, OTHER REVENUE AND GAINS (CONTINUED)**Revenue from contracts with customers (continued)***(i) Disaggregated revenue information (continued)*

For the year ended 31 December 2018

Segments	TV and other products HK\$'000
Type of goods	
Sale of goods	45,581,970
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Total revenue from contracts with customers	45,581,970
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Geographical markets	
Mainland China	18,920,054
Europe	2,059,384
North America	10,232,343
Emerging Markets	6,172,501
Others	8,197,688
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Total revenue from contracts with customers	45,581,970
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Timing of revenue recognition	
Goods transferred at a point in time	45,581,970
<hr/>	
Total revenue from contracts with customers	45,581,970

28. On information and belief, TTE Technology, Inc. (d/b/a TCL North America and TCL USA) (“TCL USA”) is the exclusive distributor of TCL TVs, including the accused infringing products, in the United States, the State of Texas, and this judicial district. On information and belief, TCL USA is a wholly owned subsidiary of TCL Electronics. *See* Ex. 1 at p. 137.

1. CORPORATE AND GROUP INFORMATION (CONTINUED)**Information about subsidiaries (continued)**

Particulars of the Company's principal subsidiaries are as follows: (continued)

Name	Place of incorporation/ registration and business	Issued ordinary/ registered share capital	% of equity attributable to the Company		Principal activities
			2019	2018	
TTE Technology Inc.	USA	US\$129,433,108	100	100	Trading of TV products and components

29. On information and belief, TCL (directly and/or through its subsidiaries, affiliates, or intermediaries – including TCL USA) places the accused infringing products into the stream of commerce knowing they will be sold and used in the State of Texas and this judicial district. TCL televisions, for example, can be purchased through retailers throughout the State of Texas and in this judicial district including, without limitation, Best Buy, Target, and Walmart.

30. On information and belief, TCL maintains control over websites accessible to residents of the State of Texas and this judicial district, through which TCL promotes and facilitates sales of the accused infringing products. For example, the website <https://www.tcl.com/us/en/> directs consumers in the United States, including those in the State of Texas and this judicial district, to purchase TCL infringing televisions from online stores, such as Amazon and BestBuy.

Our Story Blog Register a Product Sustainability Support

TCL SMART TV ▾ SOUND BARS ▾ MOBILE ▾ HEADPHONES ▾ APPLIANCES ▾

← HOME > SMART TV

FILTER BY

SCREEN SIZE ▾

- 60 or above
- 50-59
- 40-49
- 39 or less

FEATURES ▾


- QLED
- Mini-LED
- HD (720p)
- Full HD (1080p)
- 4K UHD (2160p)
- Dolby Vision
- HDR
- Smart TV
- Roku TV
- Enhanced Remote
- Android TV
- 8K UHD (4320p)
- Google TV
- Game Studio Pro
- Game Studio Plus

PRICE ▾

- \$399 or less
- \$400-\$599
- \$600-\$799

12 ITEMS


SORT BY **DEFAULT** ▾



32 INCH 3-SERIES
32S321

High Definition (720p) Resolution
Simple, intuitive interface


\$169.99



32 INCH 3-SERIES
32S331

High Definition (720p) Resolution
Simple, personalized home screen


\$124



32 INCH 3-SERIES
32S305

High Definition (720p) Resolution
Simple, intuitive interface


\$169.99



32 INCH 3-SERIES
32S327

Full High Definition (1080p) Resolution
Simple, personalized home screen


\$219.99



32 INCH 3-SERIES
32S301

High Definition (720p) Resolution
Simple, intuitive interface


\$169.99




32 INCH 3-SERIES
32S330

High Definition (720p) Resolution
Stream over 700,000 movies and shows

\$199.99






NEXT >

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TCL SMART TV ▾ SOUND BARS ▾ MOBILE ▾ HEADPHONES ▾ APPLIANCES ▾

← 3-SERIES > TCL 32" CLASS 3-SERIES FHD LED ROKU SMART TV - 32S327



MODEL 32S327

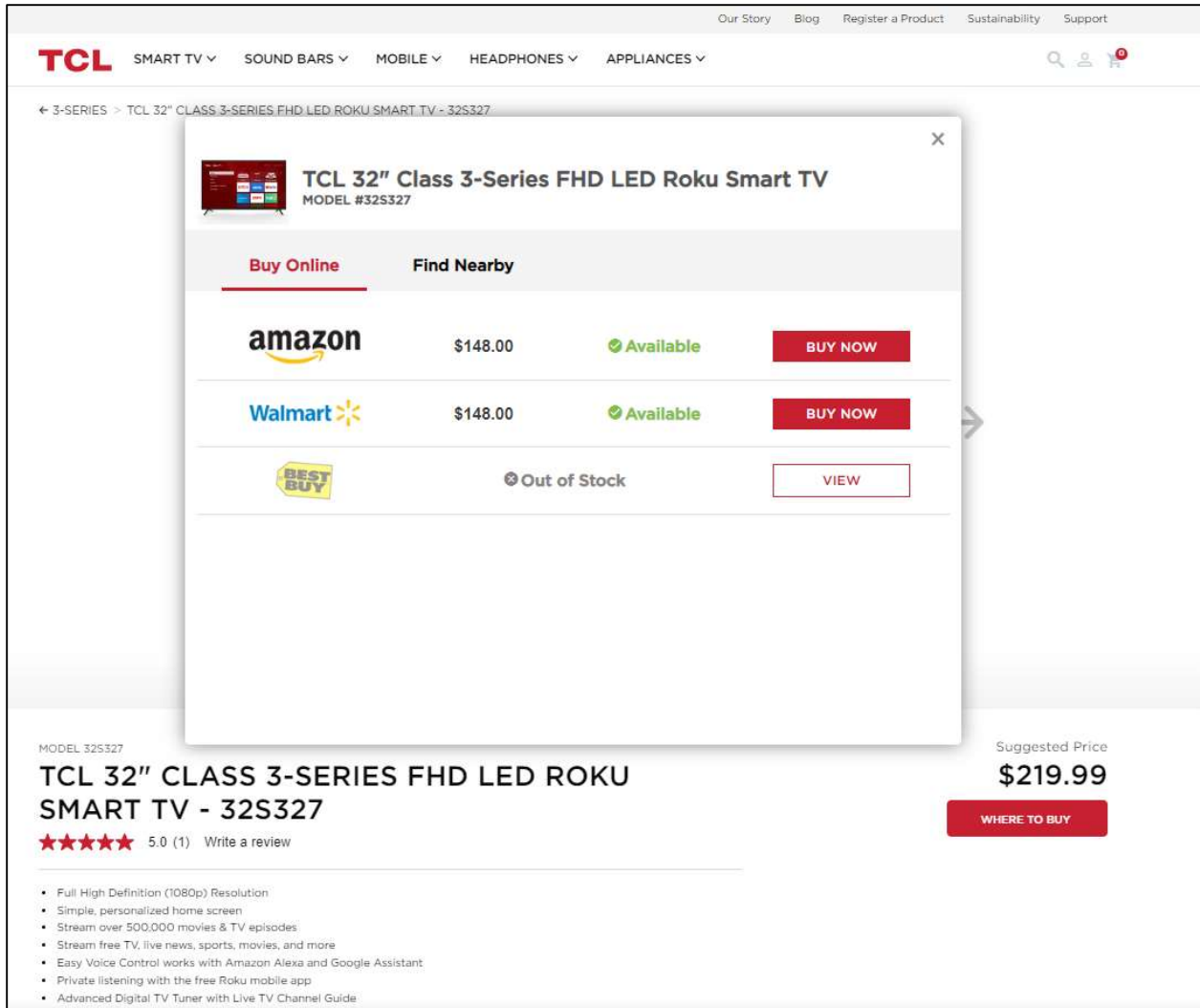
TCL 32" CLASS 3-SERIES FHD LED ROKU SMART TV - 32S327

★★★★★ 5.0 (1) Write a review

- Full High Definition (1080p) Resolution
- Simple, personalized home screen
- Stream over 500,000 movies & TV episodes
- Stream free TV, live news, sports, movies, and more
- Easy Voice Control works with Amazon Alexa and Google Assistant
- Private listening with the free Roku mobile app
- Advanced Digital TV Tuner with Live TV Channel Guide

Suggested Price
\$219.99

WHERE TO BUY



<https://www.tcl.com/us/en/catalog/home-theater?screen+size=39-or-less>.

31. Customers can also purchase TCL infringing televisions at brick-and-mortar stores located in this judicial district. For example, and as illustrated below, customers can order TCL televisions, including the accused infringing TCL TV Model No. 40S325 (indicated by the yellow box (below)), for in-store pickup at the Best Buy in Waco, Texas (indicated by the red box (below)).

BEST BUY Menu Search Best Buy **Waco** Cart

Holiday Deals Top Deals Deal of the Day Totaltech Membership Credit Cards Gift Cards Gift Ideas Health & Wellness More Account Recently Viewed Order Status Saved Items

The ultimate shave. Get a 6-blade electric shaver with automatic cleaning. **Panasonic** Shop now

Back to results | Best Buy > TV & Home Theater > TVs > All Flat-Screen TVs

TCL - 40" Class 3-Series LED Full HD Smart Roku TV
 Model: 40S325 SKU: 6302321

4.6 (3,117 Reviews) | 3 Expert Reviews | 596 Answered Questions
 Highly rated by customers for: Picture, Price, Roku

\$218.99 Clearance Save \$11
 4 payments starting at **\$54.75** with ZIP Learn more
 Reg \$229.99

EXTENDED HOLIDAY RETURN PERIOD
 When purchased now through Dec 31, you can return this item anytime until Jan 14. Learn more >

Open-Box from \$173.99

Deals on related items:
 Black Friday Deals All Flat-Screen TV's deals Outlet Deals TV & Home Theater Outlet Deals

Series: 3 series HDTV

Screen Size Class: 40"

Which TV size is best?

Resolution: Full HD (1080p)
 What's the difference in TV resolution?

Smart Platform: Roku TV
 See All Specifications

More to consider

- TCL - 40" Class 3-Series Full HD 1080p Smart Roku TV
 4.6 (20) \$199.99 ~~\$219.99~~ Compare Save
- TCL - 43" Class 3-Series Full HD Smart Android TV
 4.5 (262) \$179.99 ~~\$229.99~~ Compare Save
- Insignia™ - 40" Class N10 Series LED Full HD TV
 4.4 (3,816) \$139.99 ~~\$169.99~~ Compare Save
- TCL - 32" Class 3-Series HD Smart Android TV
 4.5 (829) \$149.99 ~~\$159.99~~ Compare Save
- Insignia™ - 43" Class F30 Series LED 4K UHD Smart Fir...
 4.5 (1,481) \$219.99 ~~\$299.99~~ Compare Save

You viewed similar items

People also bought

<https://www.bestbuy.com/site/tcl-40-class-3-series-led-full-hd-smart-roku-tv/6302321.p?skuId=6302321>

The screenshot displays the Best Buy website interface. On the left, there is a sidebar with filters for Price, Condition, and Current Deals. The main content area shows three product listings for TCL Roku TVs. The first listing is for a 75-inch 4-Series 4K UHD HDR Smart Roku TV, priced at \$629.99 (save \$90 from \$679.99). The second listing is for a 40-inch 3-Series LED Full HD Smart Roku TV, priced at \$218.99 (clearance, save \$11 from \$229.99). A red box highlights the pickup location for this model as 'Waco'. The third listing is for a 75-inch 5-Series QLED 4K UHD Smart Google TV, priced at \$799.99 (save \$100 from \$899.99). A Marantz advertisement is visible on the left side of the page.

https://www.bestbuy.com/site/searchpage.jsp?_dyncharset=UTF-8&browsedCategory=pcmcat1526935930973&cp=2&id=pcat17071&iht=n&ks=960&list=y&sc=Global&st=pcmcat1526935930973_categoryid%24abcat0101001&type=page&usc=All%20Categories

32. ParkerVision and TCL have a pending litigation in this judicial district. See ParkerVision, Inc. v. TCL Industries Holdings Co., Ltd., Case No. 6:20-CV-00945.

33. Moreover, TCL has availed itself of the legal protections of the State of Texas in multiple lawsuits. For example, in *Canon, Inc. v. TCL Electronics Holdings Ltd. f/k/a/ TCL Multimedia Technology Holdings, Ltd.*, 2-18-cv-00546 (E.D. Tex.), TCL Electronics, TCL New

Technology, and TCL King were dismissed with prejudice, through an Order of the Court granting a joint motion to dismiss. In so filing a joint motion and thereafter obtaining the Order of dismissal with prejudice, TCL – through TCL Electronics, TCL New Technology, and TCL King – purposefully availed itself to the protections, powers and resources of this State. Attached hereto as Exhibit 3 is a true and correct copy of the Order.

34. TCL also availed itself of the legal protections of this State in *American Patents LLC v. TCL Corp.*, et al., 4:18-cv-767 (E.D. Tex.), where TCL King filed counterclaims against American Patents LLC. In so doing, TCL – through TCL King – purposefully availed itself to the protections, powers, and resources of this State. Attached hereto as Exhibit 4 is a true and correct copy of TCL King’s Answer to and Counterclaims against American Patents LLC, filed on March 7, 2019.

35. TCL also availed itself of the legal protections of this State in *Nichia Corporation v. TCL Multimedia Technology Holdings, Ltd.*, 2:16-cv-1452-JRG (E.D. Tex.). TCL Electronics (using its former name, TCL Multimedia Technology Holdings, Ltd.) was dismissed, with prejudice, through an Order of the Court granting an agreed stipulation of dismissal. In so filing an agreed stipulation of dismissal and thereafter obtaining the order of dismissal with prejudice, TCL – through TCL Electronics Holding Ltd. – purposefully availed itself to the protections, powers, and resources of this State. Attached hereto as Exhibit 5 is a true and correct copy of the Order Granting Agreed Stipulation of Dismissal.

36. TCL also availed itself of the legal protections of this State in *Personalized Media Communications, LLC, v. TCL Corp. et al.*, 2:17-cv-443-JRG (E.D. Tex.), where TCL Electronics (using its former name, TCL Multimedia Technology Holdings, Ltd.) filed counterclaims against Personalized Media Communications, LLC. In so doing, TCL – through

TCL Electronics – purposefully availed itself to the protections, powers, and resources of this State. Attached hereto as Exhibit 6 is a true and correct copy of TCL Electronics’ Answer to and Counterclaims against Personalized Media Communications, LLC, filed on December 4, 2017.

37. Venue is proper for all Defendants in this judicial district pursuant to 28 U.S.C. §§ 1391(c) and/or 1400(b), and *Brunette Mach. Works, Ltd. v. Kockum Indus., Inc.*, 406 U.S. 706 (1972). There is no clearly more convenient venue.

BACKGROUND

38. In 1989, Jeff Parker and David Sorrells started ParkerVision in Jacksonville, Florida. Through the mid-1990s, ParkerVision focused on developing commercial video cameras, e.g., for television broadcasts. The cameras used radio frequency (RF) technology to automatically track the camera’s subject.

39. When developing consumer video cameras, however, ParkerVision, encountered a problem – the power and battery requirements for RF communications made a cost effective, consumer-sized product impractical. So, Mr. Sorrells and ParkerVision’s engineering team began researching ways to solve this problem.

40. At the time, a decade’s-old RF technology called super-heterodyne dominated the consumer products industry. But this technology was not without its own problems – the circuitry was large and required significant power.

41. From 1995 through 1998, ParkerVision engineers developed an innovative method of RF direct conversion by a process of sampling a RF carrier signal and transferring energy to create a down-converted baseband signal.

42. After creating prototype chips and conducting tests, ParkerVision soon realized that its technology led to improved RF receiver performance, lower power consumption, reduced

size and integration benefits. In other words, RF receivers could be built smaller, cheaper and with greater improved performance.

43. ParkerVision's innovations did not stop there. ParkerVision went on to develop additional RF down-conversion technologies, RF up-conversion technologies and other related direct-conversion technologies. ParkerVision also developed complementary wireless communications technologies that involved interactions, processes, and controls between the baseband processor and the transceiver, which improved and enhanced the operation of transceivers that incorporate ParkerVision's down-converter and up-converter technologies. To date, ParkerVision has been granted over 200 patents related to its innovations, including the patents-in-suit.

44. ParkerVision's technology helped make today's wireless devices, such as televisions, a reality by enabling RF chips used in these devices to be smaller, cheaper, and more efficient, and with higher performance.

TCL

45. TCL is a Chinese multinational electronics company headquartered in Huizhou, Guangdong Province, China. On information and belief, since at least 2014, TCL (or those acting on its behalf) has made, used, sold, offered for sale and/or imported televisions ("TCL Products") in/into the United States. <https://www.tcl.com/us/en/catalog/home-theater>.

46. TCL Products can be purchased through retailers throughout the United States including, without limitation, Best Buy, Target, Walmart, BJ Wholesale, B&H, and PC Richards & Sons.

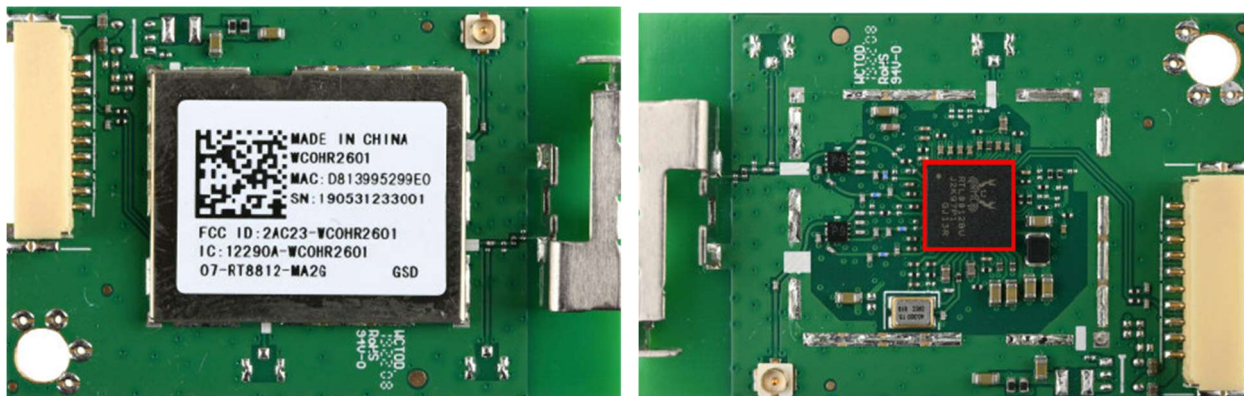
47. On information and belief, as of June 2022, TCL was one of the top sellers of smart televisions in the United States. *See* Ex. 3,

<https://doc.irasia.com/listco/hk/tclelectronics/interim/2022/intrep.pdf> at 7.

48. TCL Products include modules (e.g., WCOHR2601) containing Wi-Fi chips including, without limitation, Realtek RT8812BU (each a “TCL Chip”; collectively, the “TCL Chips”). TCL Chips provide wireless connectivity for TCL Products.

49. Below are images from a TCL television model no. 43S425 purchased from Best Buy.





50. TCL Products include, without limitation, the televisions set forth below.

TV Model No.	FCC ID
65S427	W8U65S427
43S423	W8U43S423
55S426	W8U55S426
75Q825	W8U75Q825
65R625	W8U65R625
55S427	W8U55S427
55R625	W8U55R625
43S525	W8U43S525
65S525	W8U65S525
55S525	W8U55S525
55S423	W8U55S423
43S421	W8U43S421
50S525	W8U50S525

50S423	W8U50S423
65S423	W8U65S423
75S425	W8U75S425
75R615	W8U75R615
32S301	W8U32S301
55S421	W8U55S421
32S325	W8U32S325
49S325	W8U49S325
43S325	W8U43S325
40S325	W8U40S325
32S327	W8U32S327
32S425	W8U43S425
50S425	W8U50S425
49S425	W8U49S425
32S321	W8U32S321
65S425	W8U65S425
55S425	W8U55S425
49S403	W8U49S403
65S401	W8U65S401
43S403	W8U43S403
55S401	W8U55S401
65S517	W8U65S517
55S517	W8U55S517
65R613	W8U65R613
55R613	W8U55R613
49S517	W8U49S517
43S517	W8U43S517
75C807	W8U75C807
49S303	W8U49S303
43S303	W8U43S303
40S303	W8U40S303
28S303	W8U28S303
32S303	W8U32S303
55C807	W8U55C807
65C807	W8U65C807

THE ASSERTED PATENTS

United States Patent No. 6,879,817

51. On April 12, 2005, the United States Patent and Trademark Office duly and legally issued United States Patent No. 6,879,817 (“the ’817 patent”) entitled “DC Offset, Re-Radiation, And I/Q Solutions Using Universal Frequency Translation Technology” to David F. Sorrells et al.

52. The ’817 patent is presumed valid under 35 U.S.C. § 282.

53. ParkerVision owns all rights, title, and interest in the ’817 patent.

United States Patent No. 9,288,100

54. On March 15, 2016, the United States Patent and Trademark Office duly and legally issued United States Patent No. 9,288,100 (“the ’100 patent”) entitled “Method and System for Down-Converting and Electromagnetic Signal” to David F. Sorrells et al.

55. The ’100 patent is presumed valid under 35 U.S.C. § 282.

56. ParkerVision owns all rights, title, and interest in the ’100 patent.

CLAIMS FOR RELIEF

COUNT I - Infringement of United States Patent No. 6,879,817

57. The allegations set forth above are re-alleged and incorporated by reference as if they were set forth fully here.

58. TCL directly infringes (literally and/or under the doctrine of equivalents) the ’817 patent by making, using, selling, offering for sale, and/or importing in/into the United States products covered by at least claim 37 of the ’817 patent. TCL infringes each step of claim 37 because the TCL Chips automatically, and without user modification, performed each of the claimed steps.

59. On information and belief, TCL products that infringe one or more claims of the '817 patent include, but are not limited to, the TCL Products and any other TCL device that is capable of down-converting an electromagnetic signal, as claimed in the '817 patent. On information and belief, TCL uses the TCL Products at least by testing the TCL Products in the United States.

60. On information and belief, each TCL Chip performs a method of down-converting an electromagnetic signal (e.g., high frequency radio frequency (RF) signal). The method is performed on the receiver side of each TCL Chip.

61. On information and belief, each TCL Chip receives an input signal (e.g., an RF signal at a transmission frequency).

62. On information and belief, each TCL Chip frequency down-converts the input signal with a first frequency down-conversion module (e.g., a first module having at least one transistor, capacitor, and low impedance load (e.g., one or more resistors)) to a first down-converted signal (e.g., a baseband signal). On information and belief, the first down-converted signal is formed from energy from a transistor(s) to a low impedance load when the transistor(s) is ON, and energy from a capacitor(s) to the low impedance load when the transistor(s) is OFF.

63. On information and belief, each TCL Chip frequency down-converts the input signal with a second frequency down-conversion module (e.g., a second module having at least one transistor, capacitor, and low impedance load (e.g., one or more resistors)) to a second down-converted signal (e.g., a baseband signal). On information and belief, the second down-converted signal is formed from energy from a transistor(s) to a low impedance load when the transistor(s) is ON and energy from a capacitor(s) to the low impedance load when the transistor(s) is OFF.

64. On information and belief, a differential amplifier with parallel resistor-capacitor feedback in each TCL Chip subtracts the second down-converted signal from the first down-converted signal to form an output signal.

65. On information and belief, each TCL Chip frequency down-converts the input signal with a third frequency down-conversion module (e.g., a third module having at least one transistor, capacitor, and low impedance load (e.g., one or more resistors)) to a third down-converted signal (e.g., a baseband signal). On information and belief, the third down-converted signal is formed from energy from a transistor(s) to a low impedance load when the transistor(s) is ON and energy from a capacitor(s) to the low impedance load when the transistor(s) is OFF.

66. On information and belief, each TCL Chip frequency down-converts the input signal with a fourth frequency down-conversion module (e.g., a fourth module having at least one transistor, capacitor, and low impedance load (e.g., one or more resistors)) to a fourth down-converted signal (e.g., a baseband signal). On information and belief, the fourth down-converted signal is formed from energy from a transistor(s) to the low impedance load when the transistor(s) is ON and energy from a capacitor(s) to the low impedance load when the transistor(s) is OFF.

67. On information and belief, a second differential amplifier with parallel resistor-capacitor feedback in each TCL Chip subtracts the fourth down-converted signal from the third down-converted signal to form a second output signal.

68. On information and belief, each TCL Chip samples the input signal by a transistor(s) turning ON and OFF according to a first control signal (e.g., local oscillator (LO) signal). On information and belief, each TCL Chip samples the input signal by a transistor(s) turning ON and OFF according to a second control signal (e.g., LO signal). On information and

belief, each TCL Chip samples the input signal by a transistor(s) turning ON and OFF according to a third control signal (e.g., LO signal). On information and belief, each TCL Chip samples the input signal by a transistor(s) turning ON and OFF according to a fourth control signal (e.g., LO signal).

69. ParkerVision has been damaged by the direct infringement of TCL and is suffering and will continue to suffer irreparable harm and damages as a result of this infringement.

COUNT II - Infringement of United States Patent No. 9,288,100

70. The allegations set forth above are re-alleged and incorporated by reference as if they were set forth fully here.

71. TCL directly infringes (literally and/or under the doctrine of equivalents) the '100 patent by making, using, selling, offering for sale, and/or importing in/into the United States products covered by at least claim 1 of the '100 patent.

72. TCL products that infringe one or more claims of the '100 patent include, but are not limited to, the TCL Products and any other TCL device that is capable of down-converting an electromagnetic signal, as claimed in the '100 patent.

73. With respect to claim 1, each TCL Chip is/includes a system for frequency down-converting a modulated carrier signal (e.g., high frequency RF signal) to a demodulated baseband signal, comprising: a first switch (e.g., transistor(s)) that receives a first portion of energy from the modulated carrier signal during a sampling aperture with a specified frequency of a first control signal (e.g., LO signal) that controls when the first switch is on and when the first switch is off.

74. Each TCL Chip has a first storage device (e.g., capacitor(s)) which stores the first portion of energy from the modulated carrier signal (e.g., high frequency RF signal) output by the first switch (e.g., transistor(s)) when the switch is on the first storage device having previously accumulated energy from the modulated carrier signal as a first accumulation of energy, the first portion of energy being added to the first accumulation of energy to result in a second accumulation of energy, discharges at least some of the second accumulation of energy when the first switch is off so as to leave a third accumulation of energy stored at the first storage device, and outputs a down-converted in-phase baseband signal portion of the modulated carrier signal derived from the energy stored at the first storage device both while the first switch is on and while the first switch is off.

75. Each TCL Chip has a second switch (e.g., transistor(s)) that receives a second portion of energy from the modulated carrier signal (e.g., high frequency RF signal) during a sampling aperture with a specified frequency of a second control signal (e.g., LO signal) that controls when the second switch is on and when the second switch is off.

76. Each TCL Chip has a second storage device (e.g., capacitor(s)) which stores the second portion of energy from the modulated carrier signal (e.g., high frequency RF signal) output by the second switch (e.g., transistor(s)) when the second switch is on, the second storage device having previously accumulated energy from the modulated carrier signal as a fourth accumulation of energy, the second portion of energy being added to the fourth accumulation of energy to result in a fifth accumulation of energy, discharges at least some of the fifth accumulation of energy when the second switch is off so as to leave a sixth accumulation of energy stored at the second storage device, and outputs a down-converted inverted in-phase

baseband signal portion of the modulated carrier signal derived from the energy stored at the second storage device both while the second switch is on and while the second switch is off.

77. Each TCL Chip is/includes a system wherein the down-converted in-phase baseband signal portion is generated from both the second accumulation of energy and the third accumulation of energy, and wherein the down-converted inverted in-phase baseband signal portion is generated from both the fifth accumulation of energy and the sixth accumulation of energy.

78. Each TCL Chip has a first differential amplifier circuit (e.g., differential amplifier with parallel resistor-capacitor feedback) that combines the down-converted in-phase baseband signal portion with the down-converted inverted in-phase baseband signal portion and outputs a first channel down-converted differential in-phase baseband signal.

79. ParkerVision has been damaged by the direct infringement of TCL and is suffering and will continue to suffer irreparable harm and damages as a result of this infringement.

JURY DEMANDED

80. Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, ParkerVision hereby requests a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, ParkerVision respectfully requests that the Court enter judgment in its favor and against TCL as follows:

- a. finding that TCL directly infringes one or more claims of each of the patents-in-suit;
- b. awarding ParkerVision damages under 35 U.S.C. § 284, or otherwise permitted by law, including supplemental damages for any continued post-verdict infringement;

- c. awarding ParkerVision pre-judgment and post-judgment interest on the damages award and costs;
- d. awarding cost of this action (including all disbursements) and attorney fees pursuant to 35 U.S.C. § 285, or as otherwise permitted by the law; and
- e. awarding such other costs and further relief that the Court determines to be just and equitable.

Dated: November 7, 2022

Respectfully submitted,

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**Pro hac vice to be filed*

Not admitted to practice in Virginia