

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

| | | |
|-----------------------------|---|-----------------------------------|
| LONESTAR BIOMETRICS LLC., |) | |
| |) | Case No. |
| Plaintiff, |) | <u>JURY TRIAL DEMANDED</u> |
| |) | |
| v. |) | |
| |) | |
| TCL TECHNOLOGY GROUP CORP., |) | |
| |) | |
| Defendant. |) | |
| |) | |
| |) | |

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Lonestar Biometrics LLC. (“LB” or “Plaintiff”) for its Complaint against Defendant TCL Technology Group Corp. (“TCL” or “Defendant”) for patent infringement as follows:

THE PARTIES

1. LB is a limited liability company organized and existing under the laws of the State of Texas, with its principal place of business located at 104 E. Houston Street, Marshall, TX 75670.

2. Upon information and belief, Defendant TCL is a corporation organized and existing under the laws of China, with its principal place of business located at TCL Keji Daxia, No.17, Huifeng 3rd Road, Zhongkai High-Tech Zone Huizhou, Guangdong, 516000 China. TCL is a leading manufacturer and seller of smart phones in the world and in the United States. Upon information and belief, TCL does business in Texas, directly or through intermediaries, and offers its products and/or services, including those accused herein of infringement, to customers and potential customers located in Texas, including in the Judicial District of the Eastern District of Texas.

JURISDICTION

3. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.* This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

4. This Court has personal jurisdiction over Defendant. Defendant regularly conducts business and has committed acts of patent infringement and/or has induced acts of patent infringement by others in this Judicial District and/or has contributed to patent infringement by others in this Judicial District, the State of Texas, and elsewhere in the United States.

5. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391 because, among other things, Defendant is not a resident in the United States, and thus may be sued in any Judicial District pursuant to 28 U.S.C. § 1391(c)(3).

6. Defendant is subject to this Court's jurisdiction pursuant to due process and/or the Texas Long Arm Statute due at least to its substantial business in this State and Judicial District, including (a) at least part of its past infringing activities, (b) regularly doing business or soliciting business in Texas, and/or (c) engaging in persistent conduct and/or deriving substantial revenue from goods and services provided to customers in Texas.

PATENTS-IN-SUIT

7. On January 5, 2016, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,232,088 (the "'088 Patent") entitled "Scanning in a Defined Region on a Display Screen". A true and correct copy of the '088 Patent is available at: <http://pdfpiw.uspto.gov/.piw?Docid=9232088>.

8. On January 16, 2016, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,241,082 (the "'082 Patent") entitled "Method and Apparatus for

Scanning Through a Display Screen”. A true and correct copy of the ’082 Patent is available at: <http://pdfpiw.uspto.gov/.piw?Docid=9241082>.

9. On January 31, 2017, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,560,293 (the “’293 Patent”) entitled “Method and Apparatus for Image Capture Through a Display Screen”. A true and correct copy of the ’082 Patent is available at: <http://pdfpiw.uspto.gov/.piw?Docid=9560293>.

10. LB is the sole and exclusive owner of all right, title, and interest in the ’088 Patent, the ’082 Patent, and the ’293 Patent (collectively, the “Patents-in-Suit”), and holds the exclusive right to take all actions necessary to enforce its rights to the Patents-in-Suit, including the filing of this patent infringement lawsuit. LB also has the right to recover all damages for past, present, and future infringement of the Patents-in-Suit and to seek injunctive relief as appropriate under the law.

11. LB has at all times complied with the marking provisions of 35 U.S.C. § 287 with respect to the Patents-in-Suit. Upon information and belief, prior assignees and licensees have also complied with the marking provisions of 35 U.S.C. § 287.

FACTUAL ALLEGATIONS

12. The Patents-in-Suit generally relate to methods and apparatuses for scanning and/or capturing images through a display screen.

13. The Patents-in-Suit generally relate to technology involving scanning and image capturing through a display screen in mobile and handheld devices. The technology described in the Patents-in-Suit was developed by Darwin Hu. For example, the technology is implemented by infringing mobile and handheld devices with optical fingerprint scanners embedded underneath the display screens. TCL has infringed and is continuing to infringe the Patents-in-Suit by making,

using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or importing, products including but not limited to mobile and/or handheld devices with optical fingerprint scanners embedded beneath the display screen, such as the TCL 20 Pro, among other products.

COUNT I
(Infringement of the '088 Patent)

14. Paragraphs 1 through 13 are incorporated by reference as if fully set forth herein.

15. LB has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '088 Patent.

16. Defendant has and continues to directly infringe the '088 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '088 Patent. Such products include mobile and/or handheld devices with optical fingerprint scanners embedded beneath the display screen, such as the TCL 20 Pro, among other products.

17. For example, Defendant has and continues to directly infringe at least claim 1 of the '088 Patent by making, using, offering to sell, selling, and/or importing into the United States products that include mobile phones with an optical fingerprint scanner embedded beneath the display screen, such as the TCL 20 Pro:

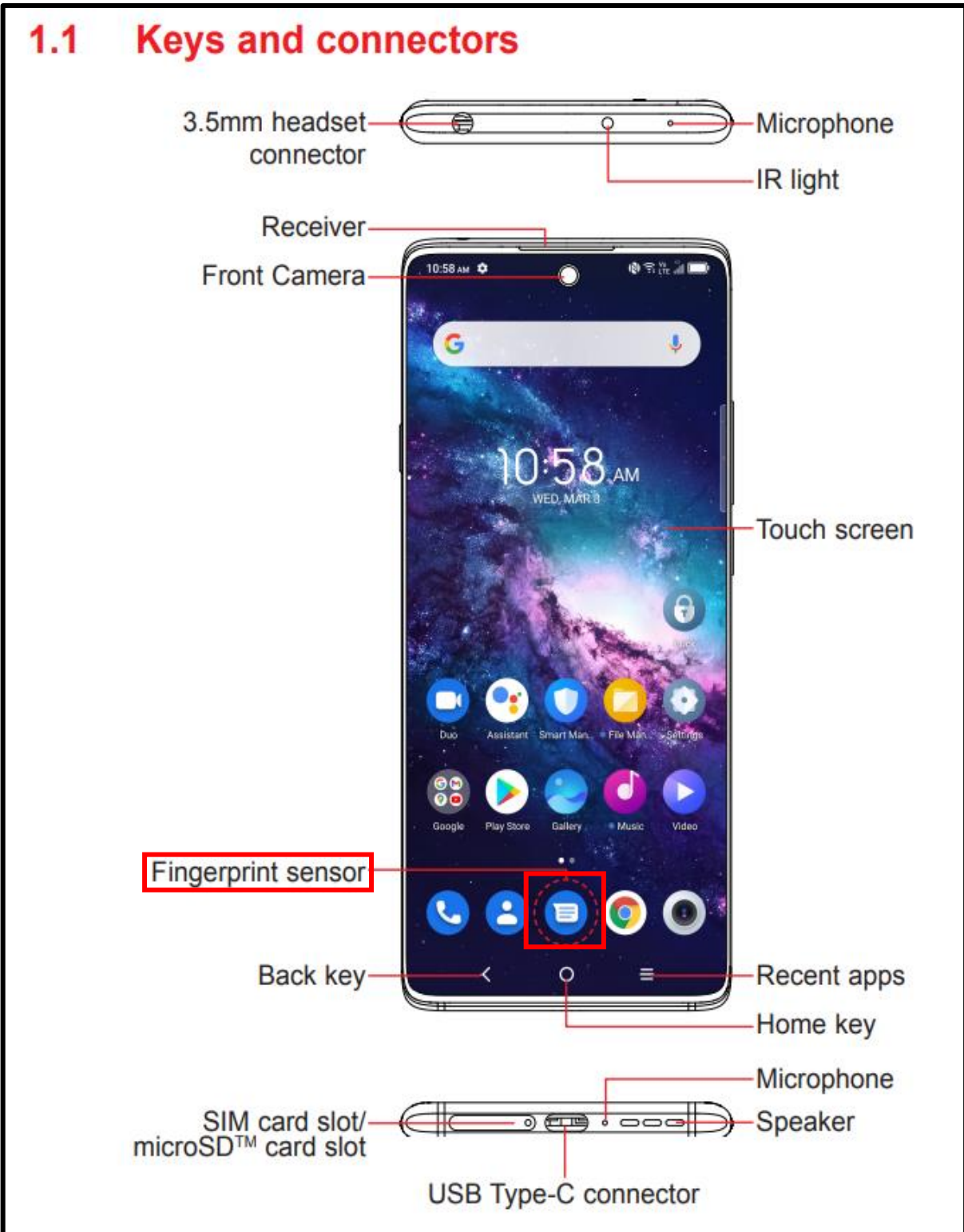
| | | |
|-----------------|---------|---|
| FEATURES | Sensors | <u>Fingerprint (under display, optical)</u> , accelerometer, gyro, proximity, compass |
|-----------------|---------|---|

¹

18. The TCL 20 Pro is a computing device which comprises a display device having a viewing area for displaying content, the display device caused to display a scanning region for a

¹ https://www.gsmarena.com/tcl_20_pro_5g-10855.php.

user to place a scanning object onto the display device in accordance with the scanning region, wherein the scanning region is defined visibly to the user and smaller than the viewing area in size, a portion of the scanning object falling into the scanning region is scanned by an array of sensors embedded in the display device:



² TCL 20 Pro User Manual at p. 4, available at: <https://mobile-support.tcl.com/global/en/service-support-mobile/tcl20-pro5g.html>.

19. For example, the TCL 20 Pro also contains and a circuit module, coupled to sensors, reading out sensing signals from the sensors to produce and image of the portion of the scanning object, wherein the image captures details on the portion of the scanning object.

20. Defendant has and continues to indirectly infringe one or more claims of the '088 Patent by knowingly and intentionally inducing others, including TCL customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling and/or importing into the United States products that include infringing technology, such as mobile and/or handheld devices with optical fingerprint scanners embedded beneath the display screen.

21. Defendant, with knowledge that these products, or the use thereof, infringes the '088 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the '088 Patent by providing these products to end users for use in an infringing manner.

22. Defendant has induced infringement by others, including end users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end users, infringe the '088 Patent, but while remaining willfully blind to the infringement.

23. LB has suffered damages as a result of Defendant's direct and indirect infringement of the '088 Patent in an amount to be proven at trial.

24. LB has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '088 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

COUNT II
(Infringement of the '082 Patent)

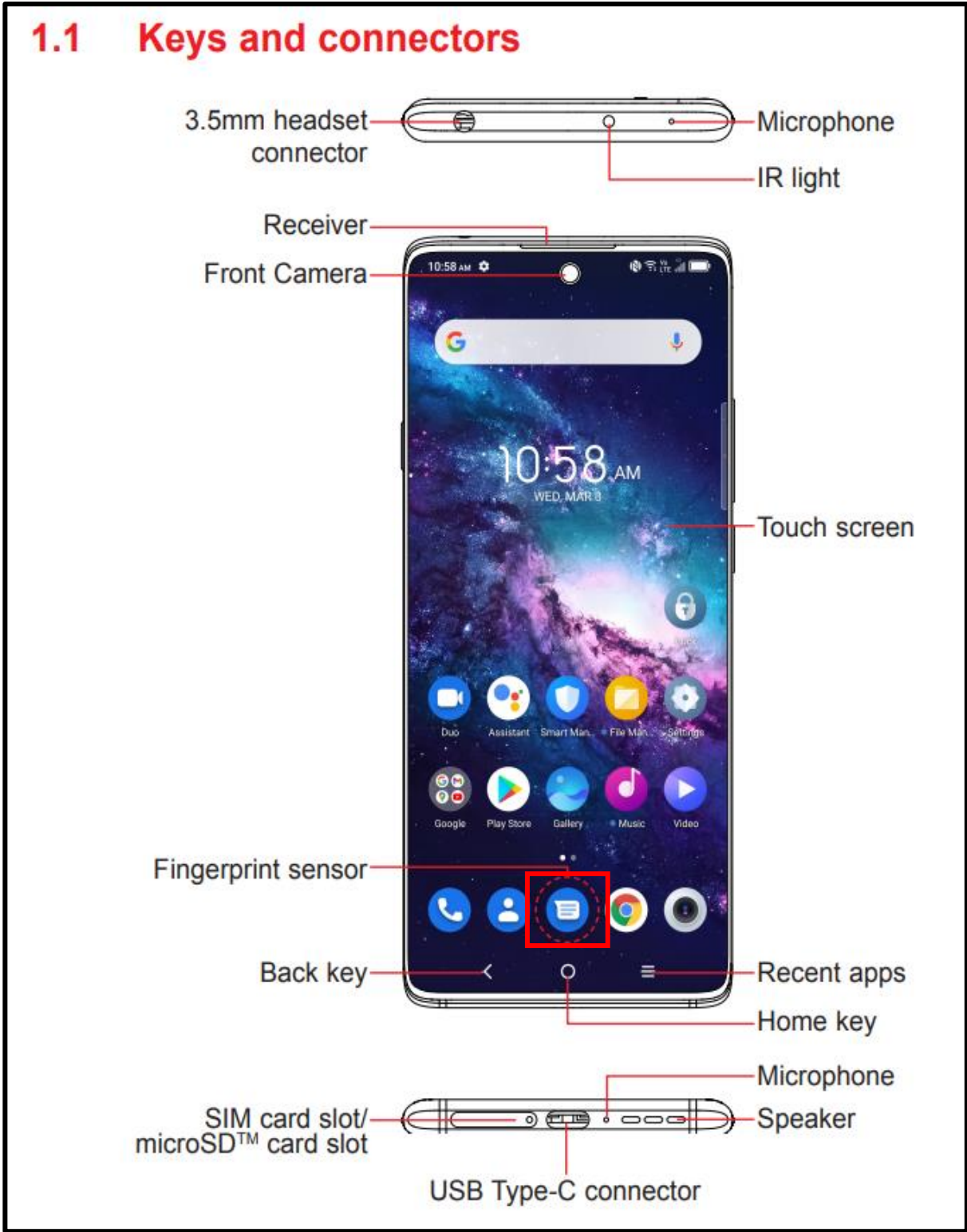
25. Paragraphs 1 through 13 are incorporated by reference as if fully set forth herein.

26. LB has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '082 Patent.

27. Defendant has and continues to directly infringe the '082 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '082 Patent. Such products include mobile and/or handheld devices with optical fingerprint scanners embedded beneath the display screen, including, but not limited to, the TCL 20 Pro, among other products.

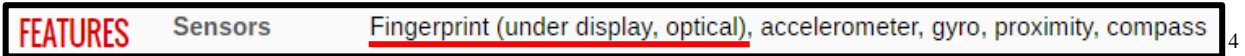
28. For example, Defendant has and continues to directly infringe at least claim 20 of the '082 Patent by making, using, offering to sell, selling, and/or importing into the United States products that include mobile phones with an optical fingerprint scanner embedded beneath the display screen, such as the TCL 20 Pro, among other products.

29. The TCL 20 Pro is a display device which comprises a display unit driven to display thereon at least a scanning region:



³ TCL 20 Pro User Manual at p. 4, available at: <https://mobile-support.tcl.com/global/en/service-support-mobile/tcl20-pro5g.html>.

30. The TCL 20 Pro further comprises a sensing module integrated with the display unit:



31. The TCL 20 Pro further comprises at least a light source to illuminate a portion of an object being placed in the scanning region and against the display unit, wherein the display unit is driven to have a moment of see-through, and at least a source is turned on to cause the sensing module to generate an image of the portion of the object:

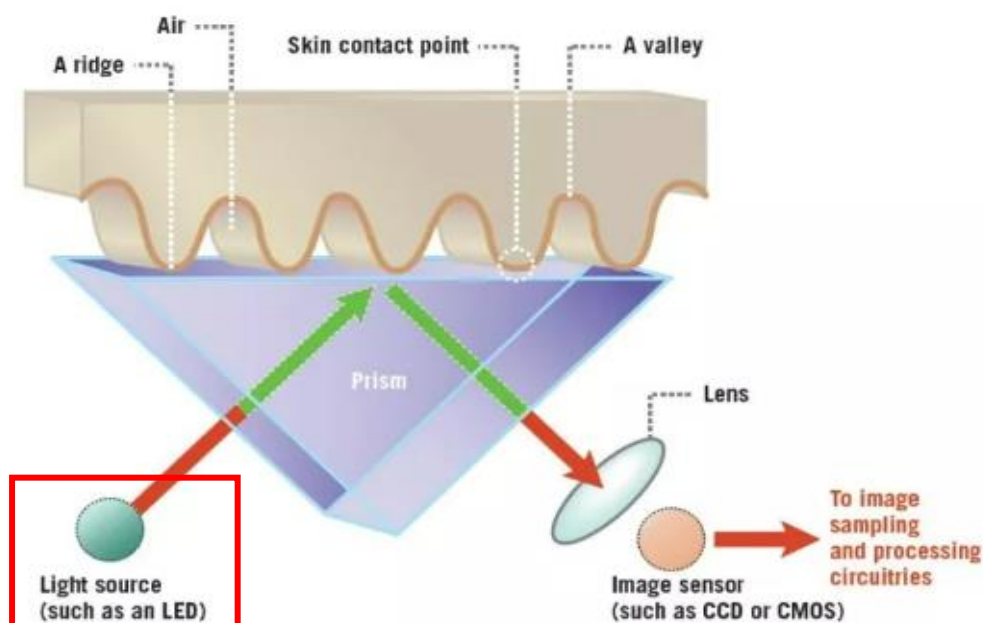
⁴ https://www.gsmarena.com/tcl_20_pro_5g-10855.php.

Optical scanners

Optical fingerprint scanners are the oldest method of capturing and comparing fingerprints. As the name suggests, this technique relies on capturing an optical image — essentially a photograph. It then uses algorithms to detect unique patterns on the surface, such as ridges or marks, by analyzing the lightest and darkest areas of the image.

Just like smartphone cameras, these sensors have a finite resolution. The higher the resolution, the finer details the sensor can discern about your finger, increasing the level of security. However, these sensors capture much higher contrast images than a regular camera. Optical scanners typically have a very high number of diodes per inch to capture these details up close. Of course, it's very dark when your finger is placed over the scanner. The scanners, therefore, incorporate arrays of LEDs or even your phone's display as a flash to light up the picture come scan time.

An optical sensor.



32. Defendant has and continues to indirectly infringe one or more claims of the '082 Patent by knowingly and intentionally inducing others, including TCL customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling and/or importing into the United States products that include infringing technology, such as mobile and/or handheld devices with optical fingerprint scanners embedded beneath the

⁵ <https://www.androidauthority.com/how-fingerprint-scanners-work-670934/>.

display screen.

33. Defendant, with knowledge that these products, or the use thereof, infringes the '082 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the '082 Patent by providing these products to end users for use in an infringing manner.

34. Defendant has induced infringement by others, including end users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end users, infringe the '082 Patent, but while remaining willfully blind to the infringement.

35. LB has suffered damages as a result of Defendant's direct and indirect infringement of the '082 Patent in an amount to be proven at trial.

36. LB has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '082 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

COUNT III
(Infringement of the '293 Patent)

37. Paragraphs 1 through 13 are incorporated by reference as if fully set forth herein.

38. LB has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '293 Patent.

39. Defendant has and continues to directly infringe the '293 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '293 Patent. Such products include mobile and/or handheld devices with optical fingerprint scanners embedded beneath the display screen,

including, but not limited to, the TCL 20 Pro, among other products.

40. For example, Defendant has and continues to directly infringe at least claim 1 of the '293 Patent by making, using, offering to sell, selling, and/or importing into the United States products that include mobile phones with an optical fingerprint scanner embedded beneath the display screen, such as the TCL 20 Pro, among other products.

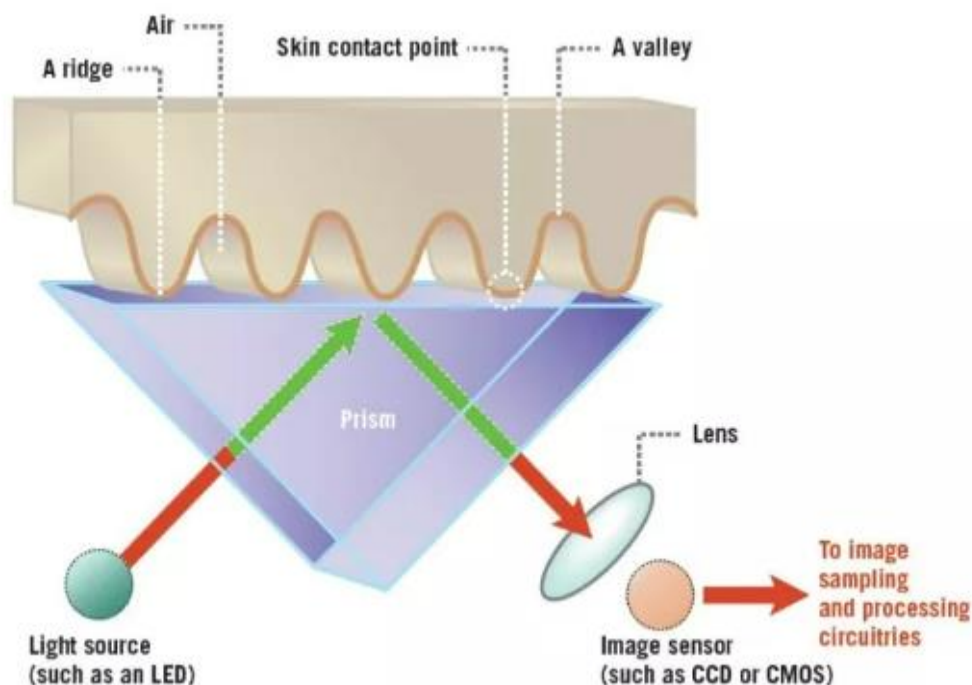
41. The TCL 20 Pro is a display device which comprises a display unit. The TCL 20 Pro further comprises an image sensing module including an optical assembly and an image sensor, wherein the optical assembly includes a first light guide with the first and second ends, the second end shaped in parabolic curvature and acting as an edge-type micro-optical light guide reflector, and the image sensor is disposed at a center of the first end:

Optical scanners

Optical fingerprint scanners are the oldest method of capturing and comparing fingerprints. As the name suggests, this technique relies on capturing an optical image — essentially a photograph. It then uses algorithms to detect unique patterns on the surface, such as ridges or marks, by analyzing the lightest and darkest areas of the image.

Just like smartphone cameras, these sensors have a finite resolution. The higher the resolution, the finer details the sensor can discern about your finger, increasing the level of security. However, these sensors capture much higher contrast images than a regular camera. Optical scanners typically have a very high number of diodes per inch to capture these details up close. Of course, it's very dark when your finger is placed over the scanner. The scanners, therefore, incorporate arrays of LEDs or even your phone's display as a flash to light up the picture come scan time.

An optical sensor.



42. The TCL 20 Pro is a display device wherein the display unit is driven to have a moment of see-through so that an object placed against the display unit is imaged by the image sensor via the first light guide that collects and focuses the reflected light onto the image sensor.

⁶ <https://www.androidauthority.com/how-fingerprint-scanners-work-670934/>.

43. Defendant has and continues to indirectly infringe one or more claims of the '293 Patent by knowingly and intentionally inducing others, including TCL customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling and/or importing into the United States products that include infringing technology, such as mobile and/or handheld devices with optical fingerprint scanners embedded beneath the display screen.

44. Defendant, with knowledge that these products, or the use thereof, infringes the '293 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the '293 Patent by providing these products to end users for use in an infringing manner.

45. Defendant has induced infringement by others, including end users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end users, infringe the '293 Patent, but while remaining willfully blind to the infringement.

46. LB has suffered damages as a result of Defendant's direct and indirect infringement of the '293 Patent in an amount to be proven at trial.

47. LB has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '293 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, LB prays for relief against Defendant as follows:

- a. Entry of judgment declaring that Defendant has directly and/or indirectly infringed one or more claims of each of the Patents-in-Suit;
- b. An order pursuant to 35 U.S.C. § 283 permanently enjoining Defendant, its officers, agents, servants, employees, attorneys, and those persons in active concert or participation with them, from further acts of infringement of one or more of the Patents-in-Suit;
- c. An order awarding damages sufficient to compensate LB for Defendant's infringement of the Patents-in-Suit, but in no event less than a reasonable royalty, together with interest and costs;
- d. Entry of judgment declaring that this case is exceptional and awarding LB its costs and reasonable attorney fees under 35 U.S.C. § 285; and
- e. Such other and further relief as the Court deems just and proper.

Dated: June 28, 2022

Respectfully submitted,

/s/ John Andrew Rubino

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**ATTORNEYS FOR PLAINTIFF,
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