

**UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

ARIGNA TECHNOLOGY LIMITED,

Plaintiff,

vs.

TCL TECHNOLOGY GROUP CORP.; TCL  
COMMUNICATION TECHNOLOGY  
HOLDINGS, LTD.; TCT MOBILE  
WORLDWIDE, LTD.; TCT MOBILE  
INTERNATIONAL, LTD.; TCL  
ELECTRONICS HOLDINGS LTD.; and TCL  
COMMUNICATION LTD.,

Defendants.

Case No. 6:22-cv-217

JURY TRIAL DEMANDED

**COMPLAINT FOR PATENT INFRINGEMENT**

This is an action for patent infringement in which Arigna Technology Limited makes the following allegations against Defendants TCL Technology Group Corp.; TCL Communication Technology Holdings, Ltd.; TCT Mobile Worldwide, Ltd.; TCT Mobile International, Ltd.; TCL Electronics Holdings Ltd.; and TCL Communication Ltd., (collectively, “TCL” or the “TCL Defendants”) each of whom without authority imports, makes, offers for sale and/or sells in the United States mobile devices that infringe the Patents asserted in this matter.

**PARTIES**

1. Plaintiff Arigna Technology Limited (“Plaintiff” or “Arigna”) is an Irish company conducting business at The Hyde Building, Suite 23, The Park, Carrickmines, Dublin 18, Ireland. Arigna owns a portfolio of patents that cover radio frequency amplifiers and circuits with applications in a wide variety of consumer electronics products, including smartphones and laptops, as well as power semiconductors for applications in the communications, automotive,

industrial automation, and energy industries. Arigna is the owner of all rights, title, and interest in and to United States Patent No. 6,603,343 (the “343 Patent”) and United States Patent No. 8,947,164 (the “164 Patent”).

2. Defendant TCL Technology Group Corp. (“TCL Technology Group”), formerly known as TCL Corporation, is a corporation organized under the laws of China with its principal place of business at TCL Technology Building, No. 17, the Huifeng Third Road, Zhongkai Avenue, Huizhou City, Guangdong, P.R. China 516006. On information and belief, TCL Technology Group does business itself, or through its subsidiaries, affiliates, and agents, in the State of Texas and the Western District of Texas.

3. Defendant TCL Communication Technology Holdings, Ltd. (“TCL Communication Technology”) is a corporation organized under the laws of the Cayman Islands with its principal place of business at 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong. On information and belief, TCL Communication Technology does business itself, or through its subsidiaries, affiliates, and agents, in the State of Texas and in the Western District of Texas.

4. Defendant TCT Mobile Worldwide, Ltd. (“TCT Mobile Worldwide”) is a corporation organized under the laws of Hong Kong with its principal place of business at 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong. TCT Mobile Worldwide operates as part of TCL. On information and belief, TCT Mobile Worldwide does business itself, or through its subsidiaries, affiliates, and agents, in the State of Texas and in the Western District of Texas.

5. Defendant TCT Mobile International, Ltd. (“TCT Mobile International”) is a corporation organized and existing under the laws of Hong Kong with its principal place of

business at 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong. TCT Mobile International operates as part of TCL. On information and belief, TCT Mobile International does business itself, or through its subsidiaries, affiliates, and agents, in the State of Texas and in the Western District of Texas.

6. Defendant TCL Electronics Holdings Ltd. (“TCL Electronics”) is a foreign entity incorporated in the Cayman Islands with limited liability with its principal place of business at 7/F, TCL Building, 22 Science Park East Avenue, 22E Hong Kong Science Park, Hong Kong. On information and belief, TCL Electronics does business itself, or through its subsidiaries, affiliates, and agents, in the State of Texas and the Western District of Texas.

7. Defendant TCL Communication Ltd. (“TCL Communication”) is, on information and belief, a corporation organized and existing under the laws of Hong Kong, with its principal place of business located at 5/F, TCL Building, 22 Science Park East Avenue, 22E Hong Kong Science Park, Hong Kong. On information and belief, TCL Communication does business itself, or through its subsidiaries, affiliates, and agents, in the State of Texas and the Western District of Texas.

8. TCL Technology Group Corp. is the head of an interrelated group of companies which together comprise one of the leading makers and sellers of smartphones and related devices. The TCL Defendants (and their subsidiaries and affiliates) are part of the same corporate structure and distribution chain for the making, importing, offering to sell, selling, and using of the accused devices in the United States, including in the State of Texas generally and this District in particular. On information and belief, the TCL Defendants (and their subsidiaries and affiliates) share the same management, common ownership, advertising platforms, facilities, distribution chains and platforms, and accused product lines and products involving related technologies. Thus, the TCL

Defendants (and their affiliates and subsidiaries) operate as a unitary business and are jointly and severally liable for the acts of patent infringement alleged herein.<sup>1</sup>

9. TCL induces its subsidiaries, affiliates, retail partners, and customers in the making, using, selling, offering for sale, and/or importing throughout the United States, including within this District, infringing products, such as the TCL 10 5G UW mobile devices, and placing such devices into the stream of commerce via established distribution channels knowing or understanding that such products would be sold and used in the United States, including in the Western District of Texas. Defendants, between and amongst themselves, purposefully direct the Accused Products into established distribution channels within this District and the U.S. nationally.

10. On information and belief, the TCL Defendants maintain a corporate presence in the United States via at least their U.S.-based sales subsidiaries and affiliates, including TTE Technology, Inc. (“TTE Technology”) and TCT Mobile (US) Inc. (“TCT Mobile U.S.”). TTE Technology is a Delaware Corporation with a principal place of business at 1860 Compton Avenue, Corona, California 92881. TTE Technology provides sales, distribution, research, and development support in North America as part of the TCL Group at the direction and control of and for its parents, including TCL Technology Group Corp. TTE Technology is an agent of Defendants. TCT Mobile U.S. is a Delaware corporation with a principal place of business at 25 Edelman, Suite 200, Irvine, California 92618. TCT Mobile U.S. provides sales, distribution, research, and development support in North America as part of the TCL Group at the direction and control of and for its parents, including TCL Technology Group Corp. TCT Mobile U.S. is an

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<sup>1</sup> See, e.g., <https://www.tcl.com/eu/en/about-tcl?the-group> (“[TCL] restructured its overall business into 11 business divisions: 7 divisions for products, 3 divisions for services and one division for venture capital and investment.”); (“TCL Multimedia Technology Holdings Limited officially changed its company name to TCL Electronic Holding Limited.”).

agent of Defendants. At the direction and control of Defendants, U.S.-based sales subsidiaries including, TTE Technology and TCT Mobile U.S., import infringing mobile devices into the United States and this District.

11. On information and belief, TCL and its U.S.-based sales subsidiaries (which act as part of a global network of overseas sales and manufacturing subsidiaries on behalf of TCL) have operated as agents of one another and vicariously as parts of the same business group to work in concert together. For example, the TCL Defendants, alone and through at least the activities of their U.S.-based sales subsidiaries (including TTE Technology and TCT Mobile U.S.), conduct business in the United States, including importing, distributing, and selling infringing products, such as the TCL 10 5G UW mobile device, in Texas and this District. The TCL Defendants, alone and through their U.S.-based subsidiaries, place such infringing products into the stream of commerce via established distribution channels knowing or understanding that such products would be sold and used in the United States, including in the Western District of Texas.

12. On information and belief, the TCL Defendants do business themselves, or through their subsidiaries, affiliates, and agents, in the State of Texas and the Western District of Texas. TCL has placed or contributed to placing infringing products, such as the TCL 10 5G UW mobile device, into the stream of commerce via established distribution channels knowing or understanding that such products would be sold and used in the United States, including in the Western District of Texas.

13. On information and belief, TCL has derived substantial revenue from infringing acts in the Western District of Texas, including from the sale and use of infringing products including the TCL 10 5G UW.

14. On information and belief, TCL manufactures, distributes, imports, offers for sale, and/or sells in the State of Texas and the Western District of Texas mobile devices that infringe the Patents asserted in this matter.

**JURISDICTION AND VENUE**

15. This is an action for patent infringement arising under the patent laws of the United States. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

16. This Court has personal jurisdiction over TCL consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. On information and belief, TCL has regularly and systematically transacted business in Texas, directly or through affiliates, subsidiaries, or intermediaries, and has committed acts of patent infringement in Texas as alleged more particularly below.

17. Upon information and belief, TCL transacts substantial business with entities and individuals in the State of Texas and the Western District of Texas, by among other things, importing, offering to sell, distributing, and selling products that infringe the Asserted Patents, including the infringing mobile devices that TCL purposefully directs into the State of Texas and this District as alleged herein, as well as by providing service and support to customers in this District, and/or inducing others to commit acts of patent infringement in Texas. TCL places the accused mobile devices into the stream of commerce via authorized and established distribution channels with the knowledge and expectation that they will be sold in the United States, including in the State of Texas and this District, and does not otherwise permit the sale of the accused products in the State of Texas, or in this District, outside of these established, authorized, and ratified distribution channels.

18. Venue is proper in this District pursuant to 28 U.S.C. § 1391(c)(3) because the TCL Defendants are foreign corporations that are not residents of the United States and are subject to personal jurisdiction in this District, and thus are subject to venue in any judicial district including this District. *See In re HTC Corp.*, 889 F.3d 1349, 1354 (Fed. Cir. 2018).

### **THE ASSERTED PATENTS**

19. This Complaint asserts the causes of action for infringement of United States Patent No. 6,603,343 and United States Patent No. 8,947,164 (together, the “Asserted Patents”). The Asserted Patents are valid and enforceable United States Patents, the entire right, title, and interest to which Arigna owns by assignment.

20. The Asserted Patents relate to power semiconductor devices using high-frequency RF signals for use in mobile devices, including smartphones, tablets, and computers.

21. On August 5, 2003, the U.S. Patent and Trademark Office duly and legally issued the ’343 Patent, which is entitled “Phase Correction Circuit for Transistor Using High-Frequency Signal.” Plaintiff holds all rights and title to the ’343 Patent, including the sole and exclusive right to bring a claim for its infringement. A true and correct copy of the ’343 Patent is attached as **Exhibit A**.

22. The ’343 Patent generally claims a phase correction circuit for a transistor using a high-frequency signal. The claimed phase correction circuit stabilizes a phase of an output signal of a transistor even if the transistor’s gate potential is increased by a temperature increase or other factors.

23. To the extent applicable, Plaintiff has complied with 35 U.S.C. § 287(a) with respect to the ’343 Patent.

24. On February 3, 2015, the U.S. Patent Trademark Office duly and legally issued the '164 Patent, which is entitled "Integrated Technique for Enhanced Power Amplifier Forward Power Detection." Plaintiff holds all rights and title to the '164 Patent, including the sole and exclusive right to bring a claim for its infringement. A true and correct copy of the '164 Patent is attached as **Exhibit B**.

25. The '164 Patent generally claims a method for accurate power detection in power amplifiers at a low cost, and in which the power detector's design does not affect the design of the power amplifier.

26. To the extent applicable, Plaintiff has complied with 35 U.S.C. § 287(a) with respect to the '164 Patent.

27. Plaintiff owns all rights, title, and interest in and to the Asserted Patents and possesses all rights of recovery.

### **FACTUAL ALLEGATIONS**

28. As referred to in this Complaint, and consistent with 35 U.S.C. § 100(c), the "United States" means "the United States of America, its territories and possessions."

29. TCL has no right to practice the intellectual property protected by the Asserted Patents.

30. TCL makes, uses, offers to sell, sells, and/or imports into the United States, products made in accordance with the '343 Patent, including but not limited to the TCL 10 5G UW.

31. TCL makes, uses, offers to sell, sell, and/or imports into the United States, products made in accordance with the '164 Patent, including but not limited to the TCL 10 5G UW.



**COUNT ONE**  
**INFRINGEMENT OF U.S. PATENT NO. 6,603,343**

32. Plaintiff repeats and incorporates by reference each preceding paragraph as if fully set forth herein and further states:

33. TCL has infringed and continues to infringe at least claim 1 of the '343 Patent in violation of 35 U.S.C. § 271, either literally or through the doctrine of equivalents, by making, using, selling, or offering for sale in the United States, and/or importing into the United States, without authorization, products that practice at least claim 1 of the '343 Patent. TCL is liable for its infringement of the '343 Patent pursuant to 35 U.S.C. § 271(a), (b), and (c).

34. More specifically, TCL manufactures, assembles, imports, offers for sale, and/or sells mobile devices that incorporate the HG11-PG660-200 RF die semiconductor device and infringe at least independent claim 1 of the '343 Patent.

35. For example, the HG11-PG660-200 RF die is found inside the Qualcomm QTM525 mmWave antenna module. The QTM525 mmWave antenna module that includes the HG11-PG660-200 RF die is designed to be included in smartphones and comes pre-installed in at least the TCL 10 5G UW.

FIGURE 1



Source: Qualcomm, *Snapdragon X55 and 5G RF briefing slides* (Feb. 2019), available at: [https://www.t-mobile.com/content/dam/tfb/pdf/tfb-iot/Qualcomm\\_SD55\\_datasheet.pdf](https://www.t-mobile.com/content/dam/tfb/pdf/tfb-iot/Qualcomm_SD55_datasheet.pdf)

36. Claim 1 is illustrative of the '343 Patent. It recites “[a] phase correction circuit for a transistor, comprising: a circuit element having an output terminal connected to a gate of a transistor to which a control signal line is connected, and an input terminal, wherein the circuit element has a reactance that changes with potential difference between the input terminal and the output terminal; and a voltage control circuit supplying a voltage to the input terminal of the circuit element so that the reactance of the circuit element decreases in response to an increase in potential of the gate, wherein a sum of the reactance of the circuit element and a gate-source reactance of the transistor remains substantially constant.”

37. Devices with transceivers, antenna modules, front-end modules, and/or other components which incorporate the HG11-PG660-200 RF die meet every element of this claim.<sup>2</sup>

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<sup>2</sup> This description of infringement is illustrative and not intended to be an exhaustive or limiting explanation of every manner in which TCL’s products infringe the '343 Patent.

The HG11-PG660-200 RF die contains a phase correction circuit for a transistor. For example, the transmitter portion of the HG11-PG660-200 RF die contains transistors with a phase correction circuit. For instance, a circuit element in the HG11-PG660-200 RF die (hereafter called “MOS-C”) forms part of a phase correction circuitry for a transistor in the HG11-PG660-200 RF die (hereafter called “MOS7”).

38. This phase correction circuit contains a circuit element having an output terminal connected to a gate of a transistor to which a control signal line is connected. For example, in the HG11-PG660-200 RF die, the circuit element MOS-C has an output terminal connected to a gate of the MOS7 transistor. It also has an input terminal.

39. A control signal line is also connected to the gate of the transistor. For example, a control signal line is connected to the gate of the MOS7 transistor through a passive bias network.

40. The circuit element has a reactance that changes with potential difference between the input terminal and the output terminal. For example, the identified MOS-C circuit element is an NMOS Field Effect Transistor whose source and drain are connected. MOS-C acts as a varactor whose capacitance (and thus reactance) changes according to the potential difference between the input terminal (drain and source node) and the output terminal (gate node).

41. This phase correction circuit in the HG11-PG660-200 RF die also contains a voltage control circuit supplying a voltage to the input terminal of the circuit element so that the reactance of the circuit element decreases in response to an increase in the potential of the gate. For example, another transistor in the HG11-PG660-200 RF die forms part of the voltage control circuit supplying a voltage to the input terminal of the circuit element MOS-C.

42. The reactance of the circuit element decreases in response to an increase in potential of the gate, wherein a sum of the reactance of the circuit element and a gate-source reactance of

the transistor remains substantially constant. For example, when the magnitude of the gate-source potential at MOS7 increases, it leads to a reduction in the capacitance of the circuit element (MOS-C). As the gate potential of the MOS7 gets more negative (i.e., the magnitude of gate-source potential increases), the gate-source capacitance of transistor MOS7 increases. This increase is offset, however, by the decrease in the capacitance of the circuit element (MOS-C) that occurs due to the increase in the magnitude of the gate potential of MOS7 such that the sum of capacitance (i.e., reactance) of the circuit element (MOS-C) and transistor (MOS7) remains substantially constant.

43. TCL makes, uses, imports, offers for sale, and/or sells mobile devices, such as but not limited to smartphones, that incorporate the infringing HG11-PG660-200 RF die in their antenna modules and/or other components, including but not limited to the TCL 10 5G UW.

44. TCL has imported and sold, and continues to sell and offer for sale, these mobile devices in the United States, including through TCL authorized retailers in the Western District of Texas.

45. TCL committed and is committing the foregoing infringing activities without license from Arigna. TCL's acts of infringement have damaged and are damaging Arigna, as owner and assignee of the '343 Patent. Arigna is entitled to recover from TCL the damages it has sustained as a result of TCL's wrongful acts in an amount subject to proof at trial. TCL's infringement of Arigna's rights under the '343 Patent will continue to damage Arigna.

46. Beginning no later than the filing of the Complaint, TCL has had actual knowledge of the '343 Patent. TCL's continued infringement following the filing of this Complaint, despite its knowledge of the '343 Patent and Arigna's infringement allegations, is intentional and deliberate and willful.

47. In addition, TCL has indirectly infringed, and continues to indirectly infringe, the '343 Patent by actively inducing its infringement in violation of 35 U.S.C. § 271(b).

48. TCL's authorized retailers and wireless carriers, such as Best Buy and T-Mobile, directly infringe the '343 Patent by using the accused TCL devices.

49. TCL knowingly induced and induces these acts of infringement with the specific intent to encourage them by taking active steps to encourage and facilitate direct infringement by these third parties, in this District and elsewhere in the United States, through its manufacture and sale of the infringing products, and through its creation and dissemination of promotional and marketing materials, supporting materials, instructions, product manuals, and/or technical information relating to the products with knowledge and the specific intent that its efforts will result in the direct infringement of the '343 Patent by these third parties.

50. Such active steps include, for example, advertising and marketing the infringing products to resellers, wireless carriers, and consumers, obtaining FCC approval for such devices to be utilized in the United States, and distributing and selling such devices to consumers and resellers knowing that they would be marketed, offered for sale, and used in the United States.

51. TCL marketing materials for the accused products likewise facilitate infringement by touting the "mmWave support . . . to help you keep up with the speed of life."

FIGURE 2



Source: TCL, *TCL 10 5G UW* (accessed February 13, 2022), available at: <https://www.tcl.com/us/en/products/mobile/tcl-10-5g-uw>

52. TCL user guides for the accused products likewise facilitate infringement, instructing consumers about, among other things, how to “use the network” “to connect to the internet with this phone.”<sup>3</sup> By instructing third parties to turn on and use the accused products for infringing purposes, such as to make and receive calls using the products’ antenna modules and connect to 5G mobile networks, TCL knowingly induces these third parties to commit infringing acts because the HG11-PG660-200 RF die in the mmWave antennas of the accused devices necessarily infringes the ’343 Patent through its operation.

<sup>3</sup> Verizon, *User Guide. TCL 105G UW*, (accessed on February 13, 2022) <https://ss7.vzw.com/is/content/VerizonWireless/tcl-10-5g-uw-en-userguide-10212020>.

53. In addition, TCL has indirectly infringed and continues to indirectly infringe the '343 Patent as a contributory infringer in violation of 35 U.S.C. § 271(c) by selling or offering to sell in the United States, or importing into the United States, infringing products with knowledge that they are especially designed or adapted to operate in a manner that infringes the '343 Patent and despite the fact that the infringing technology is not a staple article of commerce suitable for substantial non-infringing use. TCL knowingly incorporates antenna modules and/or other components with the infringing HG11-PG660-200 RF die into the accused TCL products such that they operate in an infringing manner. For example, TCL's user guide for the TCL 10 5G UW indicates that the devices may engage the antenna modules to connect to a mobile network without any user prompt when the phone is "automatically scanning and optimising data usage."<sup>4</sup> By incorporating such antenna modules into its products, TCL contributes to infringing use as consumers make and receive calls using the antennas of the accused products, which lack substantially non-infringing uses because the accused products are designed and manufactured to operate as phones in a manner that infringes the '343 Patent.

**COUNT TWO**  
**INFRINGEMENT OF U.S. PATENT NO. 8,947,164**

54. Plaintiff repeats and incorporates by reference each preceding paragraph as if fully set forth herein and further states:

55. TCL has infringed and continues to infringe at least claim 1 of the '164 Patent in violation of 35 U.S.C. § 271, either literally or through the doctrine of equivalents, by making, using, selling, or offering for sale in the United States, and/or importing into the United States,

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<sup>4</sup> *Id.*



without authorization, products that practice at least claim 1 of the '164 Patent. TCL is liable for its infringement of the '164 Patent pursuant to 35 U.S.C. § 271(a), (b), and (c).

56. More specifically, TCL manufactures, assembles, imports, offers for sale, and/or sells mobile devices that incorporate the Qualcomm SDR865 transceiver and the Qorvo QM77033D front-end module, and/or other components, which infringe at least independent claim 1 of the '164 Patent.

57. For example, the SDR865 transceiver and QM77033D front-end module come pre-installed in certain TCL mobile devices, including the TCL 10 5G UW. Figures 3 and 4 identify these components in the TCL 10 5G UW.

**FIGURE 3**

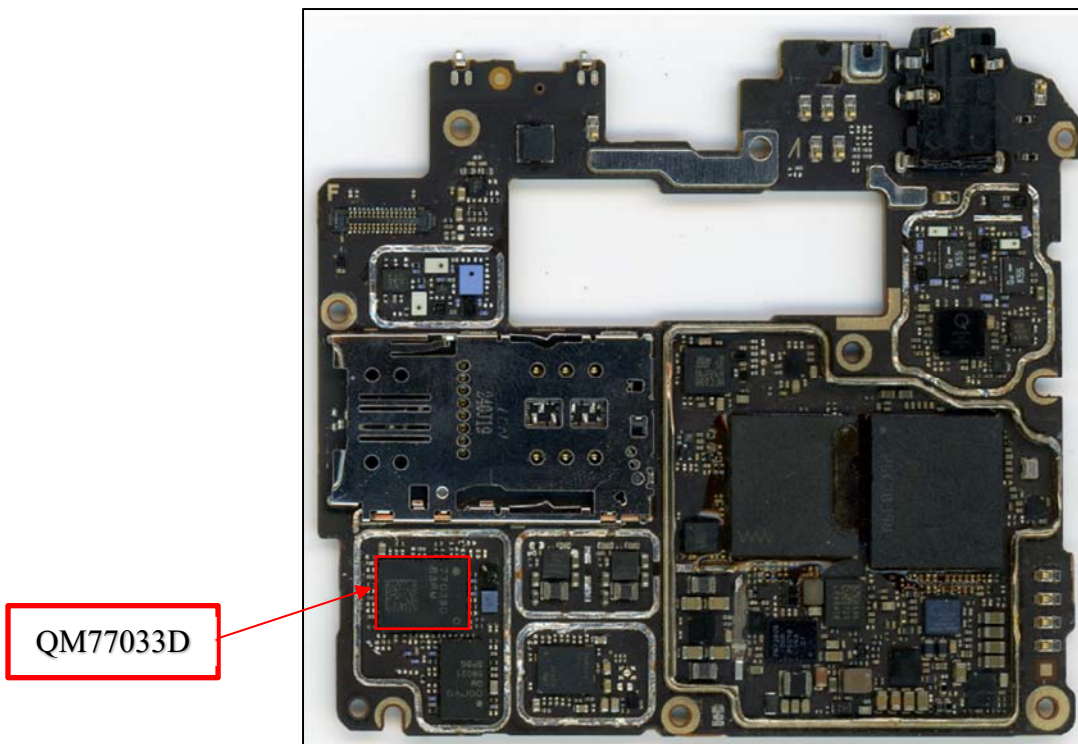
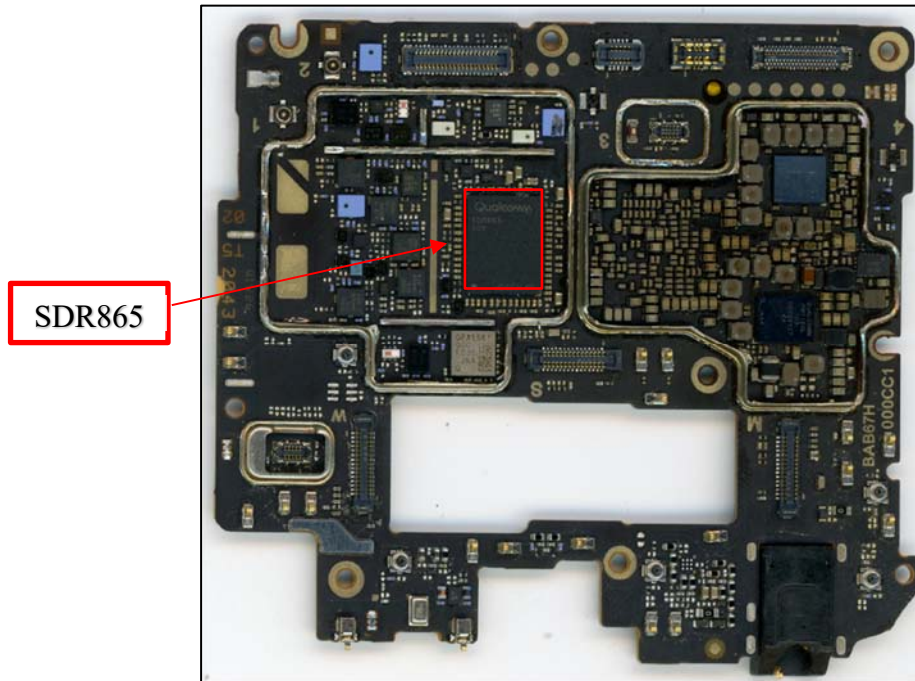




FIGURE 4

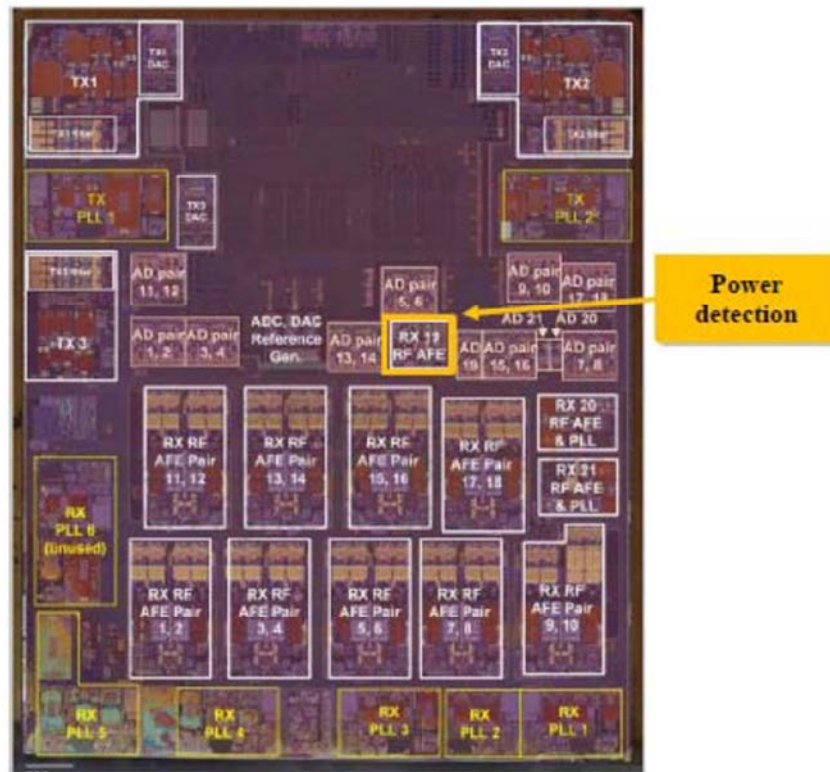


58. Claim 1 is illustrative of the '164 Patent. It recites “[a] power amplifier with power detection, comprising: a radio frequency (RF) power amplifier having a gain stage that includes a gain stage input, a gain stage output, and a feedback loop coupled between an input and an output of the power amplifier; a detection circuit having a first detection circuit input electrically coupled to the gain stage input and having a detection circuit output; an amplitude control circuit and a phase control circuit electrically coupled together in series between the gain stage output and a second detection circuit input; wherein the amplitude control circuit and the phase control circuit produce a signal received by the second detection circuit input so that the detection circuit detects a signal at the output of the detection circuit that has a power proportional to a forward power output of the power amplifier.”

59. The SDR865 transceiver and QM77033D front-end module, as installed by TCL in at least the TCL 10 5G UW, meet every element of this claim.<sup>5</sup>

60. A power amplifier is present in the QM77033D with power detection provided by the SDR865. For example, the RX19 RF AFE identified below is a part of a feedback receiver in the SDR865 that carries out a power detection function.

**FIGURE 5**



*Source:* Tech Insights, *Analysis of Qualcomm's Snapdragon SDR865 Transceiver* (accessed Sept. 6, 2021) available at: <https://www.techinsights.com/blog/analysis-qualcomms-snapdragon-sdr865-transceiver-supporting-5g-sub-6-ghz-and-lte-services>

<sup>5</sup> This description of infringement is illustrative and not intended to be an exhaustive or limiting explanation of every manner in which TCL's products infringe the '164 Patent.

61. The QPM77033D front-end module contains a radio frequency (RF) power amplifier having a gain stage that includes a gain stage input and a gain stage output. A feedback loop is coupled between an input and an output of the power amplifier.

62. The SDR865 contains a detection circuit having a first detection circuit input electrically coupled to the gain stage input and having a detection circuit output. For example, the gain stage input of the power amplifier in the QM77033D is electrically coupled to a first detection circuit input in the SDR865.

63. The SDR865 and QM77033D also contain an amplitude control circuit and a phase control circuit electrically coupled together in series between the gain stage output and a second detection circuit input. For example, the phase control circuit consists of an inductor and a capacitor in series with a low noise amplifier acting as an amplitude control circuit.

64. The amplitude control circuit and the phase control circuit produce a signal received by the second detection circuit input so that the detection circuit detects a signal at the output of the detection circuit that has a power proportional to a forward power output of the power amplifier. For example, the amplitude and phase control circuit produce a signal that is received into the mixer of the detection circuit (second input). The mixer also receives a LO signal (first input) and the result is used to estimate the forward power output of the power amplifier in the front-end module.

65. TCL makes, uses, imports, offers for sale, and or sells mobile devices that incorporate the infringing combination of SDR865 and QM77033D components, and/or others that perform in substantially equivalent manners, including the TCL 10 5G UW.

66. TCL has imported and sold, and continues to sell and offer for sale, these mobile devices in the United States, including through TCL websites (tcl.com) and TCL authorized retailers in the Western District of Texas.

67. TCL committed and is committing the foregoing infringing activities without license from Arigna. TCL's acts of infringement have damaged and are damaging Arigna, as owner and assignee of the '164 Patent. Arigna is entitled to recover from TCL the damages it has sustained as a result of TCL's wrongful acts in an amount subject to proof at trial. TCL's infringement of Arigna's rights under the '164 Patent will continue to damage Arigna.

68. Beginning no later than the filing of this Complaint, TCL has had actual knowledge of the '164 Patent. TCL's continued infringement following the filing of this Complaint, despite its knowledge of the '164 Patent and Arigna's infringement allegations, is intentional and deliberate and willful.

69. In addition, TCL indirectly infringed, and continues to indirectly infringe, the '164 Patent by actively inducing its infringement in violation of 35 U.S.C. § 271(b).

70. TCL's authorized retailers and wireless carriers, such as Best Buy and T-Mobile, directly infringe the '164 Patent by selling the accused TCL devices to consumers. Consumers directly infringe the '164 Patent by using the accused TCL devices.

71. TCL knowingly induced and induces these acts of infringement with the specific intent to encourage them by taking active steps to encourage and facilitate direct infringement by these third parties, in this District and elsewhere in the United States, through its manufacture and sale of the infringing products, and through its creation and dissemination of promotional and marketing materials, supporting materials, instructions, product manuals, and/or technical

information relating to the products with the knowledge and the specific intent that its efforts will result in the direct infringement of the '164 Patent by these third parties.

72. Such active steps include, for example, advertising and marketing the infringing products to resellers, wireless carriers, and consumers, obtaining FCC approval for such devices to be utilized in the United States, and distributing and selling such devices to consumers and resellers knowing that they would be marketed, offered for sale, and used in the United States. TCL user guides for the accused products facilitate infringement, instructing consumers how to, among other things, “press and hold” the power key to “select from power off [or] restart” and that the phone is “automatically scanning and optimising data usage to preserve battery levels.”<sup>6</sup> By instructing third parties to turn on and use the accused products and connect to mobile networks, TCL knowingly induces these third parties to commit infringing acts as the power detection functions of the infringing products operate.

73. In addition, TCL has indirectly infringed and continues to indirectly infringe the '164 Patent as a contributory infringer in violation of 35 U.S.C. § 271(c) by selling or offering to sell in the United States, or importing into the United States, infringing products with knowledge that they are especially designed or adapted to operate in a manner that infringes the '164 Patent and despite the fact that the infringing technology is not a staple article of commerce suitable for substantial non-infringing use. TCL knowingly incorporates specific transceivers and front-end modules into the accused products such that they operate in an infringing manner.

74. TCL's user manual for the TCL 10 5G UW illustrates this, as it describes the device's detection and control of the amount of power of its transmitted radio frequency signal

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<sup>6</sup> Verizon, *User Guide. TCL 105G UW*, (accessed on February 13, 2022) <https://ss7.vzw.com/is/content/VerizonWireless/tcl-10-5g-uw-en-userguide-10212020>.

when in use: “Your phone is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radio-frequency (RF) energy.”<sup>7</sup> The user manual further indicates that “the phone is designed to operate at multiple power levels so as to use only the power required to reach the network.”<sup>8</sup> By knowingly incorporating into its products devices that perform these power detection functions in an infringing manner, TCL contributes to infringing use as consumers turn on and use the accused products, which lack substantially non-infringing uses because the accused products are designed and manufactured to operate as smartphones in powered-on, transmitting modes that infringe the ’164 Patent.

### **DEMAND FOR JURY TRIAL**

75. Plaintiff Arigna hereby demands a jury trial for all issues so triable.

### **PRAYER FOR RELIEF**

WHEREFORE, Plaintiff Arigna Technology Limited requests entry of judgment in its favor and against TCL as follows:

- A. Declaring that TCL has infringed United States Patent No. 6,603,343;
- B. Declaring that TCL has infringed United States Patent No. 8,947,164;
- C. Declaring that TCL’s infringement of United States Patent No. 6,603,343 has been willful and deliberate, at least from the filing of this Complaint;
- D. Declaring that TCL’s infringement of United States Patent No. 8,947,164 has been willful and deliberate, at least from the filing of this Complaint;
- E. Awarding damages to Plaintiff in an amount no less than a reasonable royalty for TCL’s infringement of United States Patent No. 6,603,343 and United States Patent No.

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<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

8,947,164, together with treble damages for willful infringement, prejudgment and post-judgment interest, and costs as permitted under 35 U.S.C. § 284;

- F. Awarding attorneys' fees pursuant to 35 U.S.C. § 285 or as otherwise permitted by law;
- G. Ordering TCL to pay supplemental damages to Arigna, including any ongoing royalties and interest, with an accounting, as needed; and
- H. Awarding such other costs and further relief as the Court may deem just and proper.

Dated: February 28, 2022

Respectfully submitted,

/s/ Charles L. Ainsworth

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