IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION

AMERICAN PATENTS LLC, Plaintiff, v. ZTE CORPORATION, ZTE (TX), INC., and ZTE (USA) INC., Defendants.	CIVIL ACTION NO. 4:18-cv-675 ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT **JURY TRIAL DEMANDED**

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff American Patents LLC ("American Patents" or "Plaintiff") files this original complaint against ZTE Corporation, ZTE (TX), Inc., and ZTE (USA) Inc. (collectively, "ZTE"), alleging, based on its own knowledge as to itself and its own actions and based on information and belief as to all other matters, as follows:

PARTIES

1. American Patents is a limited liability company formed under the laws of the State of Texas, with its principal place of business at 2325 Oak Alley, Tyler, Texas, 75703.

2. Defendant ZTE Corporation is a Chinese corporation with a place of business at ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong Province, People's Republic of China 518057.

3. Defendant ZTE (TX), Inc. is a corporation organized and existing under the laws of the state of Texas and may be served with process through its registered agent, Ferguson, Braswell & Fraser, PC at 2500 Dallas Parkway, Suite 501, Plano, Texas 75093. ZTE (TX), Inc. is a wholly-owned subsidiary of ZTE Corporation.

4. Defendant ZTE (USA) Inc. is a corporation organized and existing under the laws of the state of New Jersey, with a place of business at 2425 North Central Expressway, Suite 800, Richardson, Texas and may be served with process through its registered agent, Jing Li, 2425 N. Central Expressway, Suite 323, Richardson, Texas 75080. ZTE (USA) Inc. is a wholly-owned subsidiary of ZTE Corporation.

JURISDICTION AND VENUE

5. This is an action for infringement of United States patents arising under 35 U.S.C. §§ 271, 281, and 284–85, among others. This Court has subject matter jurisdiction of the action under 28 U.S.C. § 1331 and § 1338(a).

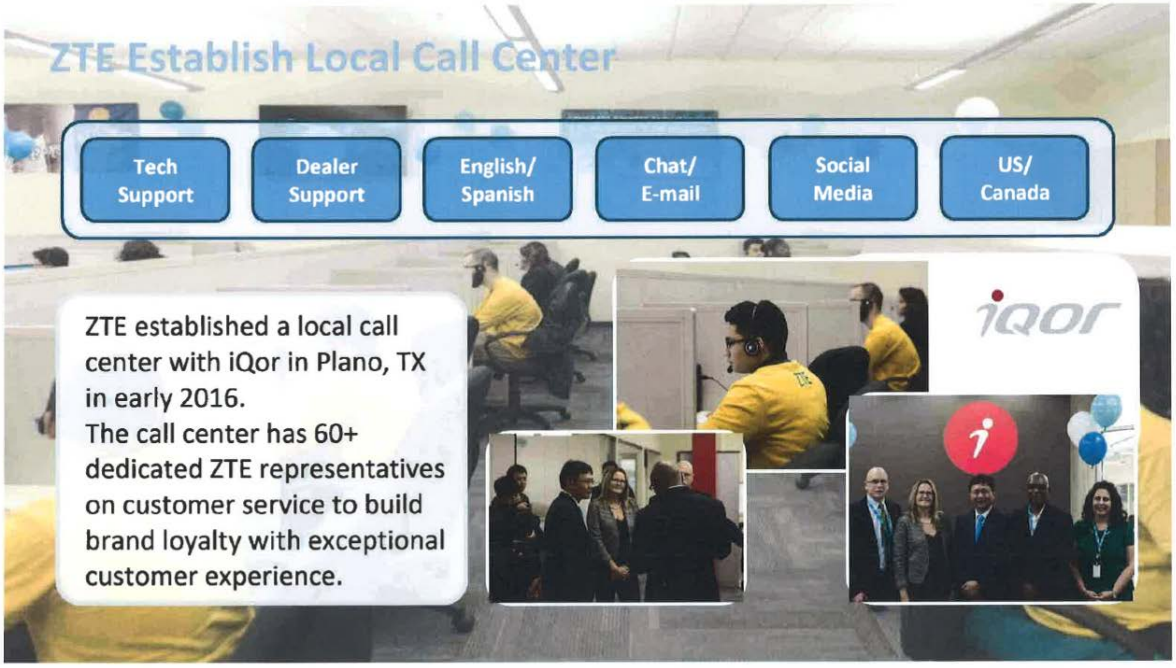
6. ZTE is in the business of supplying mobile devices, such as smartphones and tablets, in the United States.

7. ZTE has solicited business in the State of Texas, transacted business within the State of Texas and attempted to derive financial benefit from residents of the State of Texas, including benefits directly related to the instant patent infringement cause of action set forth herein.

8. ZTE has made, used, sold, offered for sale, and/or imported mobile phones and/or has placed such phones into the stream of commerce, which phones have been offered for sale, sold, and/or used in the State of Texas and this judicial district.

9. ZTE has made, used, sold, offered for sale, and/or imported wireless mobile communication devices that are alleged herein to infringe one or more of the patents set forth herein, and/or has placed such devices into the stream of commerce, which devices have been made, offered for sale, sold, and/or used in the State of Texas and within this judicial district.

10. ZTE established a call center with iQor in Plano, Texas in 2016. That call center has more than sixty dedicated ZTE USA, Inc. customer service representatives whose objective is to "build brand loyalty with exceptional customer service."



ZTE-FRCT0000544

11. ZTE USA, Inc. employees visit the Plano call center regularly to work with the iQor representatives and ZTE USA, Inc. has at least two full-time employees on site at the call center.

12. There is at least one ZTE sign inside of the Plano call center.

13. ZTE USA, Inc.'s customer-facing website seamlessly integrates with customer support provided by iQor such that customers are unaware whether they are being assisted by an iQor employee or a ZTE employee.

14. Callers to the Plano call center are seeking assistance with, and the iQor representatives provide advice about, ZTE products.

15. The Plano call center is a regular and established place of business for ZTE USA, Inc. in which business activities are carried out for and/or on behalf of ZTE USA, Inc.

16. The Plano call center is a physical, geographical location in this judicial district from which the business of ZTE is carried out.

17. ZTE makes, uses, sells, and/or offers to sell products in this judicial district that are accused of infringement in this Complaint.

18. ZTE Corporation is subject to personal jurisdiction in Texas and in this judicial district.

19. ZTE USA, Inc. is subject to personal jurisdiction in Texas and in this judicial district.

20. ZTE (TX) Inc. is subject to personal jurisdiction in Texas and in this judicial district.

21. ZTE is subject to personal jurisdiction under the provisions of the Texas Long Arm Statute by virtue of the fact that ZTE has availed itself of the privilege of conducting and soliciting business within this State, including engaging in at least some of the infringing activities in this State, as well as by others acting as ZTE's agents and/or representatives, such that it would be reasonable for this Court to exercise jurisdiction consistent with principles underlying the U.S. Constitution, and the exercise of jurisdiction by this Court would not offend traditional notions of fair play and substantial justice.

22. ZTE has also established minimum contacts with this judicial district and regularly transacts and does business within this district, including advertising, promoting and selling products over the internet, through intermediaries, representatives and/or agents located within this judicial district, that infringe Plaintiff's patents, which products are then sold and/or shipped directly to citizens residing within this State and in this judicial district. ZTE has purposefully directed activities at citizens of this State including those located within this judicial district.

23. ZTE has purposefully and voluntarily placed its products into the stream of commerce with the expectation that they will be purchased and used by customers located in the State of Texas and the Eastern District of Texas. ZTE's customers in the Eastern District of Texas have purchased and used and continue to purchase and use ZTE's products.

24. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391 and 1400(b). ZTE has transacted business in this district and has committed, by itself or in concert with others, acts of patent infringement in this district. ZTE has a regular and established place of business in this district at least at a local call center at 6865 Windcrest Dr., Plano, TX 75024. ZTE (TX) resides in the District because it is incorporated in Texas pursuant to 28 U.S.C. § 1391(d).

25. Venue is proper as to Defendant ZTE Corporation, which is organized under the laws of China. 28 U.S.C. § 1391(c)(3) provides that "a defendant not resident in the United States may be sued in any judicial district, and the joinder of such a defendant shall be disregarded in determining where the action may be brought with respect to other defendants."

26. ZTE is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to ZTE's substantial business in this forum, including: (i) at least a portion of the infringements alleged herein; and/or (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or deriving substantial revenue from goods and services provided to individuals in Texas and in this district.

BACKGROUND

27. The patents-in-suit generally pertain to communications networks and other technology used in "smart" devices such as smartphones. The technology disclosed by the patents was developed by personnel at AT&T Mobility, Georgia Institute of Technology, and Sun Microsystems.

28. AT&T Mobility is the second largest provider of wireless services in the United States. AT&T Mobility and its parent company, AT&T Inc. have a rich history of invention and innovation. These companies can trace their roots back to the invention of the first telephone by

Alexander Graham Bell in the 1870's. Since the time of Alexander Bell, AT&T (or Ma Bell as it was once called) has been a leader in the field of communications. In the 1890's AT&T built the first long distance telephone network in the United States. AT&T was instrumental throughout the 1900's in developing and innovating telephone networks. In the early 1980's, an AT&T company created the first cellular network in the United States. In the 1990s and 2000s, AT&T was at the forefront of the wireless revolution. In 2007 as part of a partnership with Apple, AT&T exclusively sold the original iPhone to its customers.

29. Georgia Institute of Technology ("Georgia Tech") is a leading public research university located in Atlanta, Georgia. Founded in 1885, Georgia Tech is often ranked as one of the top ten public universities in the United States. Three of the patents-in-suit were developed by a professor and a graduate student in Georgia Tech's Electrical and Computer Engineering department. This undergraduate and graduate programs of this department are often ranked in the top five of their respective categories.

30. Sun Microsystems ("Sun") was founded in 1982 and was a major contributor to the evolution of computing and networking technologies. Sun developed both hardware and software for its own servers and computer workstations. As part of this development, Sun created many key technologies that are still in use today. For example, the widely used Java platform was developed by Sun. Sun was acquired by Oracle Corporation around 2010.

COUNT I

DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,088,782

31. On August 8, 2006, United States Patent No. 7,088,782 ("the '782 Patent") was duly and legally issued by the United States Patent and Trademark Office for an invention entitled "Time And Frequency Synchronization In Multi-Input, Multi-Output (MIMO) Systems."

32. American Patents is the owner of the '782 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '782 Patent against infringers, and to collect damages for all relevant times.

33. ZTE made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including, for example its Axon family of products that include 802.11n and/or LTE capabilities ("accused products"):

(Source: https://www.zteusa.com/axonm/)

Certification ID: WFA72858	Page 1 of 2
Date of Last Certification	August 16, 2017
Company	ZTE Corporation
Product	LTE/WCDMA/GSMGPRS Mutil-Mode Digital Mobile Phone
Model Number	Z999
Product Identifier(s)	
Category	Smartphone, multi-mode (Wi-Fi and other)
Hardware Version	Product: Z999HWV1.0, Wi-Fi Component: QCA6174_REV3_2
Firmware Version	Product: Z999V1.0.0B02, Wi-Fi Component: 4.3.3.371
Operating System	Android, version: 7.1.2
Frequency Band(s)	2.4 GHz, 5 GHz

(Source: https://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA72858)

34. By doing so, ZTE has directly infringed (literally and/or under the doctrine of equivalents) at least Claim 30 of the '782 Patent. ZTE's infringement in this regard is ongoing.

35. ZTE has infringed the '782 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale systems utilizing a method for synchronizing a Multi-Input Multi-Output (MIMO) Orthogonal Frequency Division Multiplexing (OFDM) system in time and frequency domains.

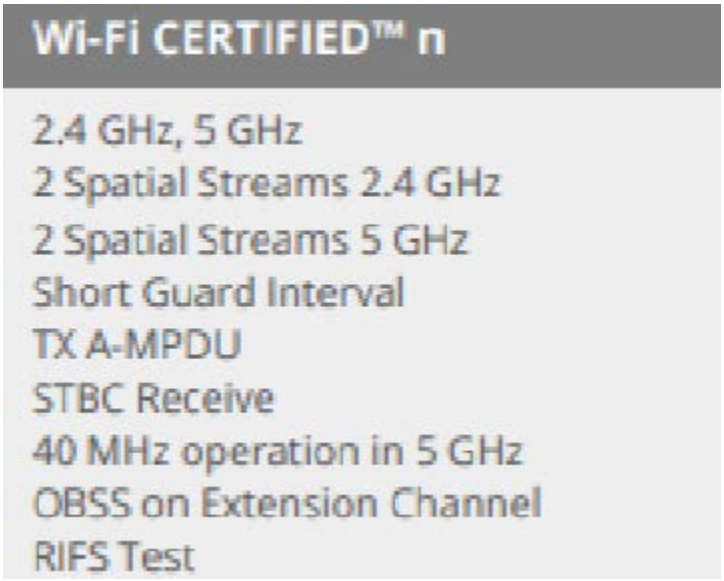
36. The methods practiced by the accused products include producing a frame of data comprising a training symbol that includes a synchronization component that aids in synchronization, a plurality of data symbols, and a plurality of cyclic prefixes.

37. The methods practiced by the accused products include transmitting the frame over a channel.

38. The methods practiced by the accused products include receiving the transmitted frame.

39. The methods practiced by the accused products include demodulating the received frame.

40. The methods practiced by the accused products include synchronizing the received demodulated frame to the transmitted frame such that the data symbols are synchronized in the time domain and frequency domain.



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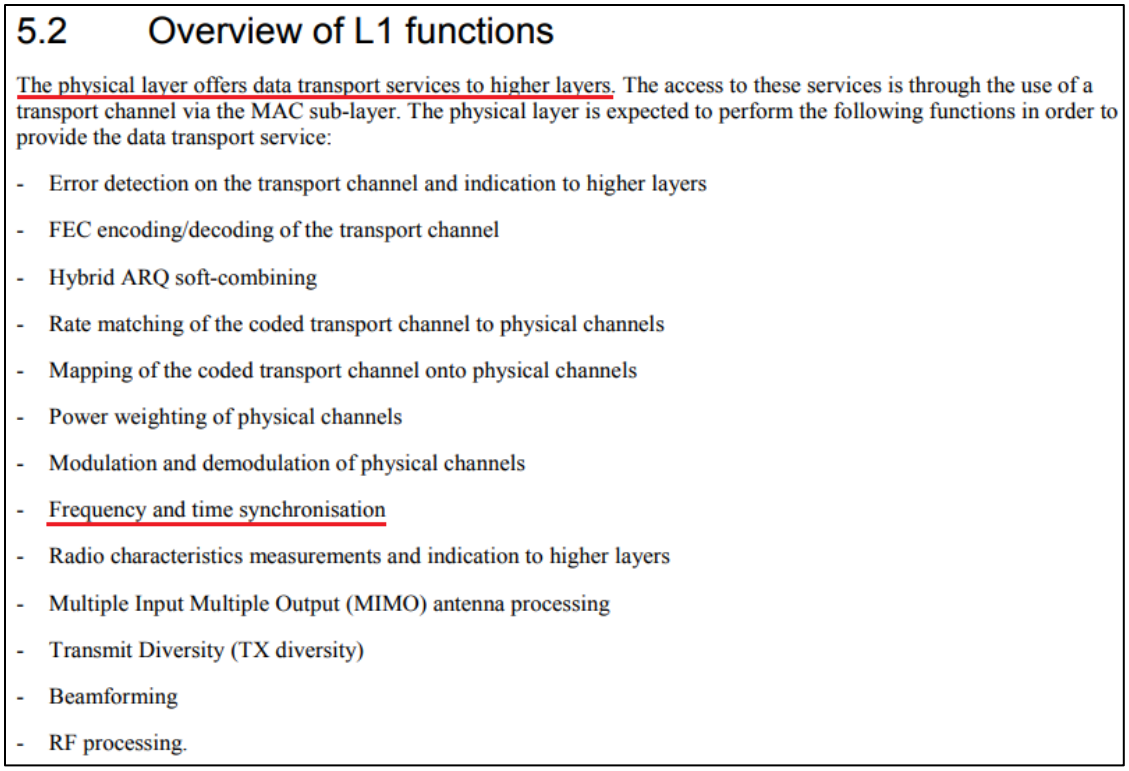


5.2 Overview of L1 functions

The physical layer offers data transport services to higher layers. The access to these services is through the use of a transport channel via the MAC sub-layer. The physical layer is expected to perform the following functions in order to provide the data transport service:

- Error detection on the transport channel and indication to higher layers
- FEC encoding/decoding of the transport channel
- Hybrid ARQ soft-combining
- Rate matching of the coded transport channel to physical channels
- Mapping of the coded transport channel onto physical channels
- Power weighting of physical channels
- Modulation and demodulation of physical channels
- Frequency and time synchronisation
- Radio characteristics measurements and indication to higher layers
- Multiple Input Multiple Output (MIMO) antenna processing
- Transmit Diversity (TX diversity)
- Beamforming
- RF processing.

(Source: https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/15.00.00_60/ts_136302v150000p.pdf)

41. The methods practiced by the accused products include wherein the synchronizing in the time domain comprises coarse time synchronizing and fine time synchronizing.

42. ZTE has had knowledge of the ‘782 Patent at least as of the date when it was notified of the filing of this action.

43. American Patents has been damaged as a result of the infringing conduct by ZTE alleged above. Thus, ZTE is liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

44. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the ‘782 Patent.

COUNT II

DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,310,304

45. On December 18, 2007, United States Patent No. 7,310,304 (“the ‘304 Patent”) was duly and legally issued by the United States Patent and Trademark Office for an invention entitled “Estimating Channel Parameters in Multi-Input, Multi-Output (MIMO) Systems.”

46. American Patents is the owner of the ‘304 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ‘304 Patent against infringers, and to collect damages for all relevant times.

47. ZTE made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including, for example its Axon family of products that include 802.11n and/or LTE capabilities (“accused products”):

(Source: https://www.zteusa.com/axonm/)

Certification ID: WFA72858 **Page 1 of 2**

Date of Last Certification	August 16, 2017
Company	ZTE Corporation
Product	LTE/WCDMA/GSMGPRS Mutil-Mode Digital Mobile Phone
Model Number	Z999
Product Identifier(s)	
Category	Smartphone, multi-mode (Wi-Fi and other)
Hardware Version	Product: Z999HWV1.0, Wi-Fi Component: QCA6174_REV3_2
Firmware Version	Product: Z999V1.0.0B02, Wi-Fi Component: 4.3.3.371
Operating System	Android, version: 7.1.2
Frequency Band(s)	2.4 GHz, 5 GHz

(Source: https://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA72858)

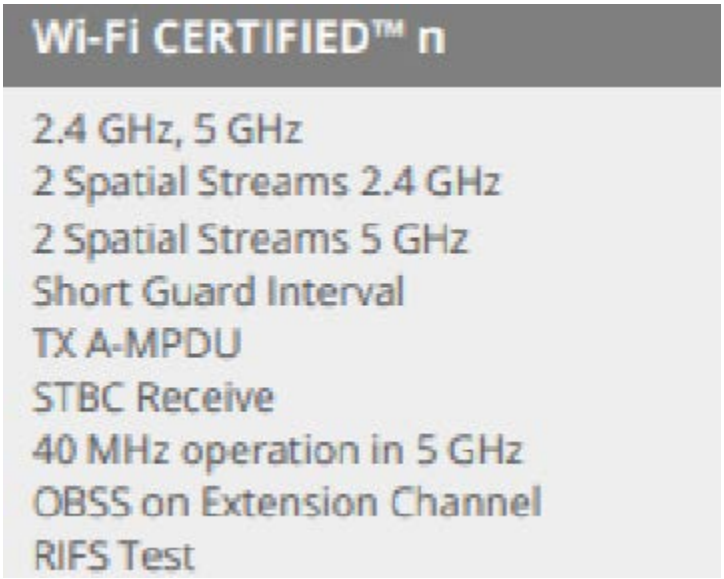
48. By doing so, ZTE has directly infringed (literally and/or under the doctrine of equivalents) at least Claim 1 of the '304 Patent. ZTE's infringement in this regard is ongoing.

49. ZTE has infringed the '304 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale products including an Orthogonal Frequency Division Multiplexing (OFDM) transmitter.

50. The accused products include an encoder configured to process data to be transmitted within an OFDM system, the encoder further configured to separate the data onto one or more transmit diversity branches (TDBs).

51. The accused products include one or more OFDM modulators, each OFDM modulator connected to a respective TDB, each OFDM modulator configured to produce a frame including a plurality of data symbols, a training structure, and cyclic prefixes inserted among the data symbols.

52. The accused products include one or more transmitting antennas in communication with the one or more OFDM modulators, respectively, each transmitting antenna configured to transmit the respective frame over a channel.



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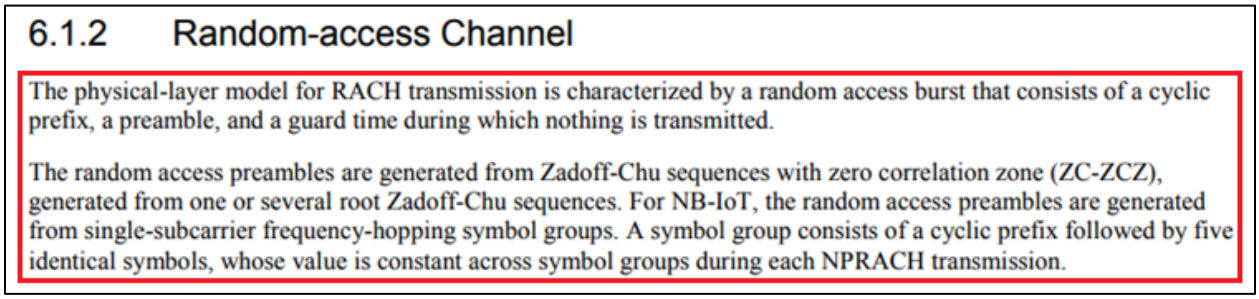


6.1.2 Random-access Channel

The physical-layer model for RACH transmission is characterized by a random access burst that consists of a cyclic prefix, a preamble, and a guard time during which nothing is transmitted.

The random access preambles are generated from Zadoff-Chu sequences with zero correlation zone (ZC-ZCZ), generated from one or several root Zadoff-Chu sequences. For NB-IoT, the random access preambles are generated from single-subcarrier frequency-hopping symbol groups. A symbol group consists of a cyclic prefix followed by five identical symbols, whose value is constant across symbol groups during each NPRACH transmission.

(Source: https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/15.00.00_60/ts_136302v150000p.pdf)

53. The accused products include wherein the training structure of each frame includes a predetermined signal transmission matrix at a respective sub-channel, each training structure adjusted to have a substantially constant amplitude in a time domain, and the cyclic prefixes are further inserted within the training symbol, and wherein the cyclic prefixes within the training symbol are longer than the cyclic prefixes among the data symbols, thereby countering an extended channel impulse response and improving synchronization performance.

54. ZTE has had knowledge of the ‘304 Patent at least as of the date when it was notified of the filing of this action.

55. American Patents has been damaged as a result of the infringing conduct by ZTE alleged above. Thus, ZTE is liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

56. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the ‘304 Patent.

COUNT III

DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,706,458

57. On April 27, 2010, United States Patent No. 7,706,458 ("the '458 Patent") was duly and legally issued by the United States Patent and Trademark Office for an invention entitled "Time And Frequency Synchronization In Multi-Input, Multi-Output (MIMO) Systems."

58. American Patents is the owner of the '458 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '458 Patent against infringers, and to collect damages for all relevant times.

59. ZTE made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including, for example its Axon family of products that include 802.11n and/or LTE capabilities ("accused products"):

(Source: https://www.zteusa.com/axonm/)

Certification ID: WFA72858	Page 1 of 2
Date of Last Certification	August 16, 2017
Company	ZTE Corporation
Product	LTE/WCDMA/GSMGPRS Mutil-Mode Digital Mobile Phone
Model Number	Z999
Product Identifier(s)	
Category	Smartphone, multi-mode (Wi-Fi and other)
Hardware Version	Product: Z999HWV1.0, Wi-Fi Component: QCA6174_REV3_2
Firmware Version	Product: Z999V1.0.0B02, Wi-Fi Component: 4.3.3.371
Operating System	Android, version: 7.1.2
Frequency Band(s)	2.4 GHz, 5 GHz

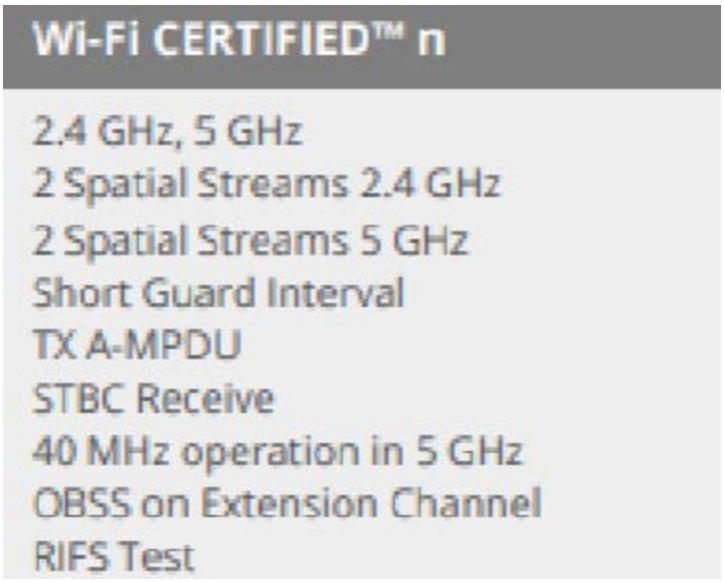
(Source: https://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA72858)

60. By doing so, ZTE has directly infringed (literally and/or under the doctrine of equivalents) at least Claim 1 of the '458 Patent. ZTE's infringement in this regard is ongoing.

61. ZTE has infringed the '458 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale products including an apparatus for synchronizing a communication system.

62. The accused products include a number (Q) of Orthogonal Frequency Division Multiplexing (OFDM) modulators, each OFDM modulator producing a frame having at least one inserted symbol, a plurality of data symbols, and cyclic prefixes.

63. The accused products include Q transmitting antennas, each transmitting antenna connected to a respective OFDM modulator, the transmitting antennas configured to transmit a respective frame over a channel.



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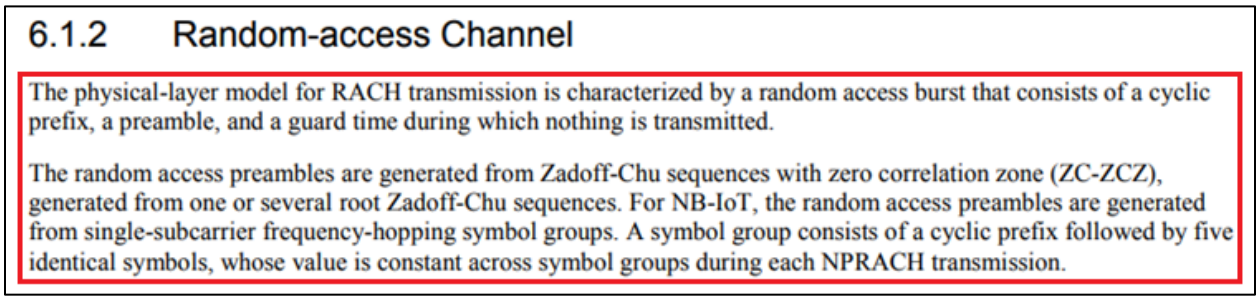


6.1.2 Random-access Channel

The physical-layer model for RACH transmission is characterized by a random access burst that consists of a cyclic prefix, a preamble, and a guard time during which nothing is transmitted.

The random access preambles are generated from Zadoff-Chu sequences with zero correlation zone (ZC-ZCZ), generated from one or several root Zadoff-Chu sequences. For NB-IoT, the random access preambles are generated from single-subcarrier frequency-hopping symbol groups. A symbol group consists of a cyclic prefix followed by five identical symbols, whose value is constant across symbol groups during each NPRACH transmission.

(Source: https://www.etsi.org/deliver/etsi_ts/136300_136399/136302/15.00.00_60/ts_136302v150000p.pdf)

64. The accused products include a number (L) of receiving antennas for receiving the transmitted frames.

65. The accused products include L OFDM demodulators, each OFDM demodulator corresponding to a respective receiving antenna, the L OFDM demodulators including a synchronization circuit that processes the received frame in order to synchronize the received frame in both time domain and frequency domain, wherein each of the L OFDM demodulators comprises a pre-amplifier, a local oscillator, a mixer having a first input and a second input, the

first input connected to an output of the pre-amplifier, the second input connected to an output of the local oscillator, an analog-to-digital converter (ADC) connected to an output of the mixer, the synchronization circuit having one input connected to an output of the ADC, a cyclic-prefix remover connected to an output of the synchronization circuit, a serial-to-parallel converter connected to an output of the cyclic prefix remover, and a discrete Fournier transform (DFT) stage connected to an output of the serial-to-parallel converter, an output of the DFT stage connected to another input to the synchronization circuit.

66. ZTE has had knowledge of the ‘458 Patent at least as of the date when it was notified of the filing of this action.

67. American Patents has been damaged as a result of the infringing conduct by ZTE alleged above. Thus, ZTE is liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

68. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the ‘458 Patent.

COUNT IV

DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,373,655

69. On May 13, 2008, United States Patent No. 7,373,655 ("the '655 Patent") was duly and legally issued by the United States Patent and Trademark Office for an invention entitled "System For Securing Inbound And Outbound Data Packet Flow In A Computer Network."

70. American Patents is the owner of the '655 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '655 Patent against infringers, and to collect damages for all relevant times.

71. ZTE made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems that allow for initiation and/or control of Internet streamed content including, for example its Axon family of products ("accused products"):

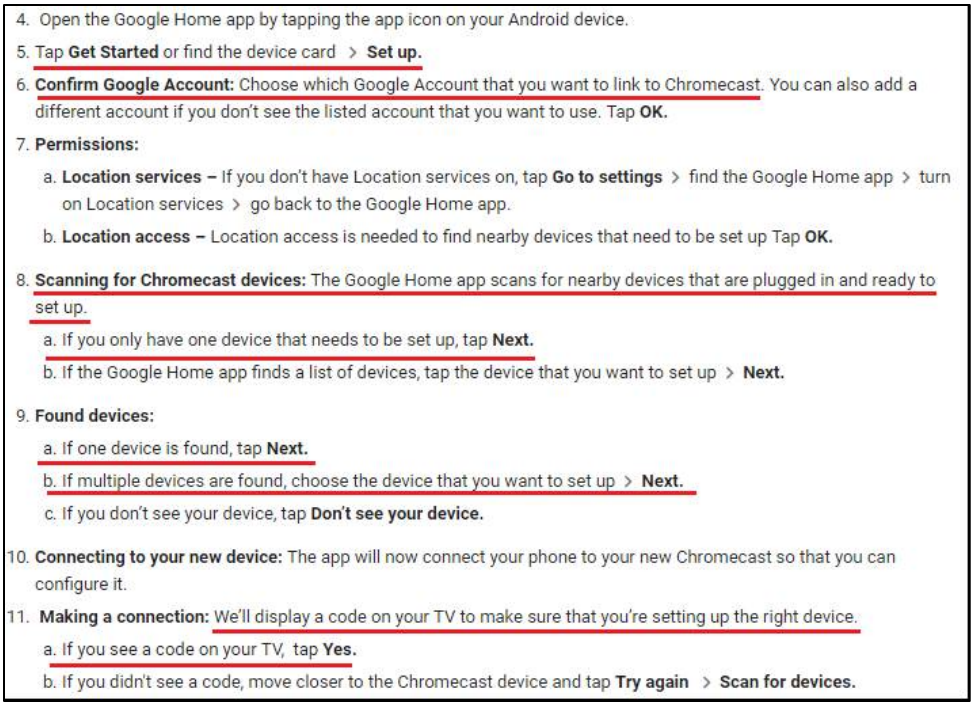
(Source: https://www.zteusa.com/axonm/)

72. By doing so, ZTE has directly infringed (literally and/or under the doctrine of equivalents) at least Claim 5 of the '655 Patent. ZTE's infringement in this regard is ongoing.

73. ZTE has infringed the '655 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale systems utilizing a method.

74. The methods practiced by the accused products include arranging a network element in a network, the network element being pre-authorized to access a set of network resources.

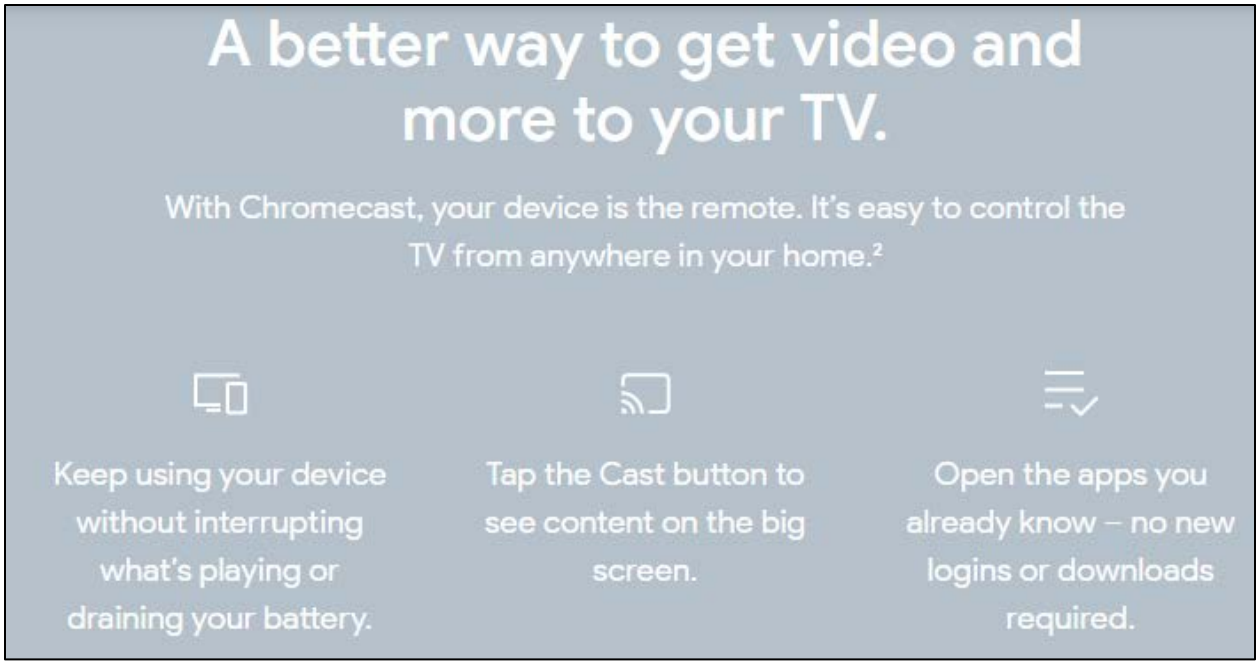
75. The methods practiced by the accused products include receiving, at the network element, a request from a user to connect to the network element.



4. Open the Google Home app by tapping the app icon on your Android device.
5. Tap **Get Started** or find the device card > **Set up.**
6. **Confirm Google Account:** Choose which Google Account that you want to link to Chromecast. You can also add a different account if you don't see the listed account that you want to use. Tap **OK.**
7. **Permissions:**
   a. **Location services –** If you don't have Location services on, tap **Go to settings** > find the Google Home app > turn on Location services > go back to the Google Home app.
   b. **Location access –** Location access is needed to find nearby devices that need to be set up Tap **OK.**
8. **Scanning for Chromecast devices:** The Google Home app scans for nearby devices that are plugged in and ready to set up.
   a. If you only have one device that needs to be set up, tap **Next.**
   b. If the Google Home app finds a list of devices, tap the device that you want to set up > **Next.**
9. **Found devices:**
   a. If one device is found, tap **Next.**
   b. If multiple devices are found, choose the device that you want to set up > **Next.**
   c. If you don't see your device, tap **Don't see your device.**
10. **Connecting to your new device:** The app will now connect your phone to your new Chromecast so that you can configure it.
11. **Making a connection:** We'll display a code on your TV to make sure that you're setting up the right device.
    a. If you see a code on your TV, tap **Yes.**
    b. If you didn't see a code, move closer to the Chromecast device and tap **Try again** > **Scan for devices.**

(Source: https://support.google.com/chromecast/answer/2998456?co=GENIE.Platform%3DAndroid&oco=1)

76. The methods practiced by the accused products include determining whether the user is authorized to connect to the network element and, if so, allowing the user to assume the identity of the network element.



(Source: https://store.google.com/product/chromecast_2015)

77. The methods practiced by the accused products include accessing, by the user, one of the set of network resources that the network element is pre-authorized to access, based on the user's assuming the identity of the network element.

78. ZTE has had knowledge of the '655 Patent at least as of the date when it was notified of the filing of this action.

79. American Patents has been damaged as a result of the infringing conduct by ZTE alleged above. Thus, ZTE is liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

80. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '655 Patent.

COUNT V

DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,934,090

81. On April 26, 2011, United States Patent No. 7,934,090 ("the '090 Patent") was duly and legally issued by the United States Patent and Trademark Office for an invention entitled "System For Securing Inbound And Outbound Data Packet Flow In A Computer Network."

82. American Patents is the owner of the '090 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '090 Patent against infringers, and to collect damages for all relevant times.

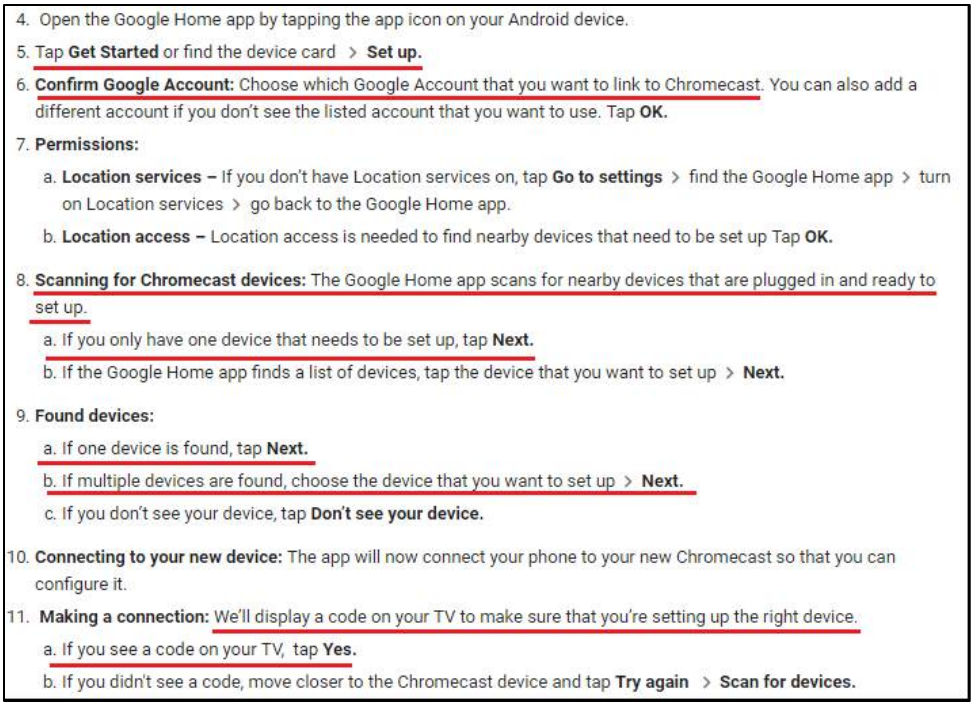
83. ZTE made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems that allow for initiation and/or control of Internet streamed content including, for example its Axon family of products ("accused products"):

(Source: https://www.zteusa.com/axonm/)

84. By doing so, ZTE has directly infringed (literally and/or under the doctrine of equivalents) at least Claim 1 of the '090 Patent. ZTE's infringement in this regard is ongoing.

85. ZTE has infringed the '090 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale systems utilizing a method for providing access to a network resource.

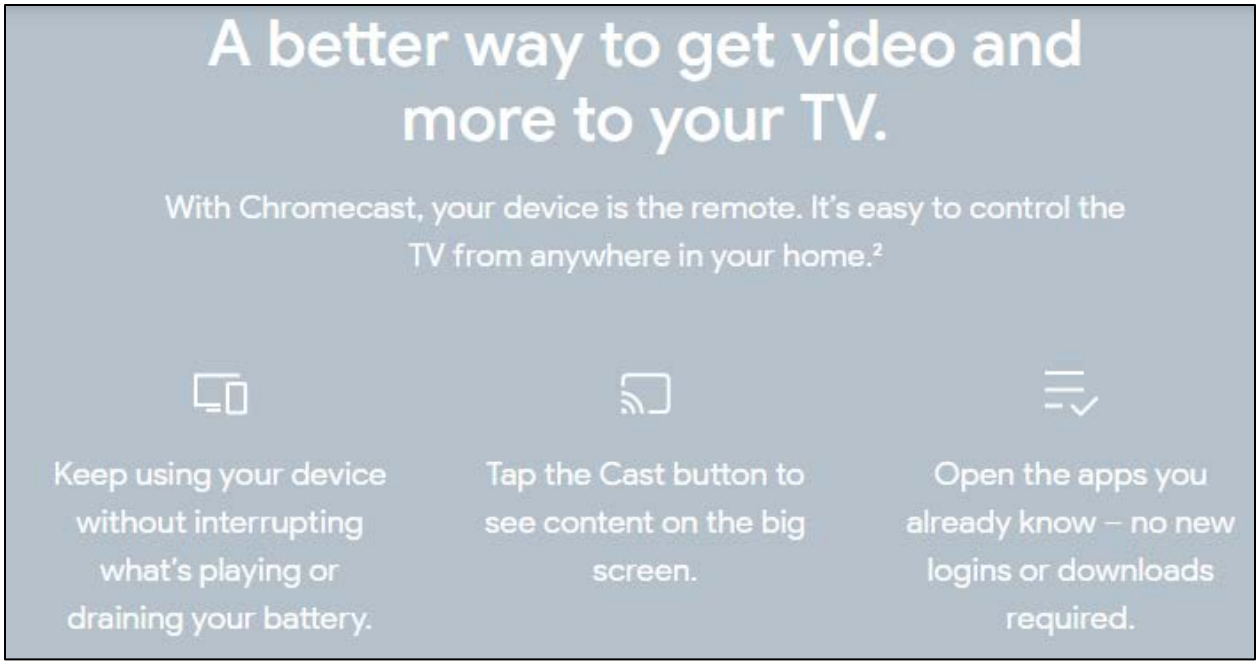
86. The methods practiced by the accused products include receiving, at a network node that is pre-authorized to access the network resource, a request to allow a first user to assume an identity of the network node, the network node that is pre-authorized having a plurality of access privileges associated therewith.



4. Open the Google Home app by tapping the app icon on your Android device.
5. Tap **Get Started** or find the device card > **Set up.**
6. **Confirm Google Account:** Choose which Google Account that you want to link to Chromecast. You can also add a different account if you don't see the listed account that you want to use. Tap **OK.**
7. **Permissions:**
   a. **Location services –** If you don't have Location services on, tap **Go to settings** > find the Google Home app > turn on Location services > go back to the Google Home app.
   b. **Location access –** Location access is needed to find nearby devices that need to be set up Tap **OK.**
8. **Scanning for Chromecast devices:** The Google Home app scans for nearby devices that are plugged in and ready to set up.
   a. If you only have one device that needs to be set up, tap **Next.**
   b. If the Google Home app finds a list of devices, tap the device that you want to set up > **Next.**
9. **Found devices:**
   a. If one device is found, tap **Next.**
   b. If multiple devices are found, choose the device that you want to set up > **Next.**
   c. If you don't see your device, tap **Don't see your device.**
10. **Connecting to your new device:** The app will now connect your phone to your new Chromecast so that you can configure it.
11. **Making a connection:** We'll display a code on your TV to make sure that you're setting up the right device.
    a. If you see a code on your TV, tap **Yes.**
    b. If you didn't see a code, move closer to the Chromecast device and tap **Try again** > **Scan for devices.**

(Source: https://support.google.com/chromecast/answer/2998456?co=GENIE.Platform%3DAndroid&oco=1)

87. The methods practiced by the accused products include allowing the first user to assume the identity of the network node that is pre-authorized, such that the first user appears to the network resource to be the network node that is pre-authorized, after verifying that the first user is authorized.



(Source: https://store.google.com/product/chromecast_2015)

88. The methods practiced by the accused products include, based on the first user assuming the identity of the network node that is pre-authorized, allowing the first user to access the network resource using the plurality of access privileges associated with the network node that is pre-authorized.

89. ZTE has had knowledge of the '090 Patent at least as of the date when it was notified of the filing of this action.

90. American Patents has been damaged as a result of the infringing conduct by ZTE alleged above. Thus, ZTE is liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

91. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '090 Patent.

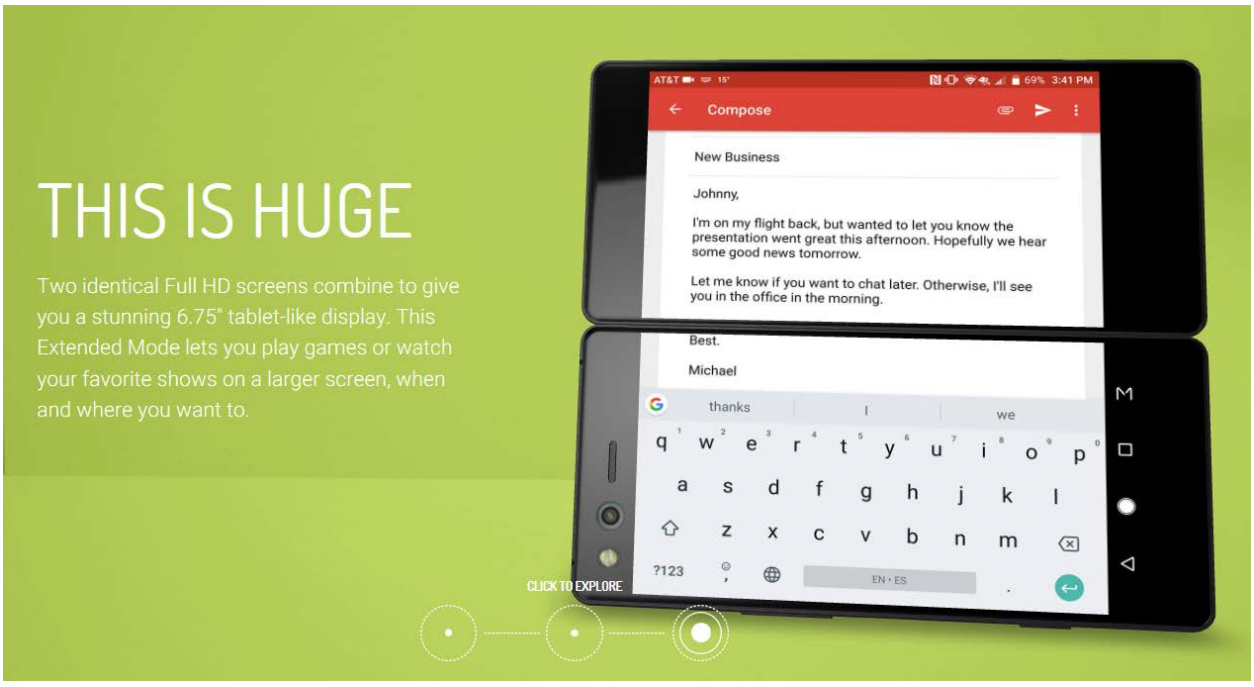
COUNT VI

DIRECT INFRINGEMENT OF U.S. PATENT NO. 6,004,049

92. On December 21, 1999, United States Patent No. 6,004,049 ("the '049 Patent") was duly and legally issued by the United States Patent and Trademark Office for an invention entitled "Method And Apparatus For Dynamic Configuration Of An Input Device."

93. American Patents is the owner of the '049 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '049 Patent against infringers, and to collect damages for all relevant times.

94. ZTE made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems that include advanced keyboard layouts including, for example its Axon family of products having predictive text and other advanced keyboard layout capabilities ("accused products"):

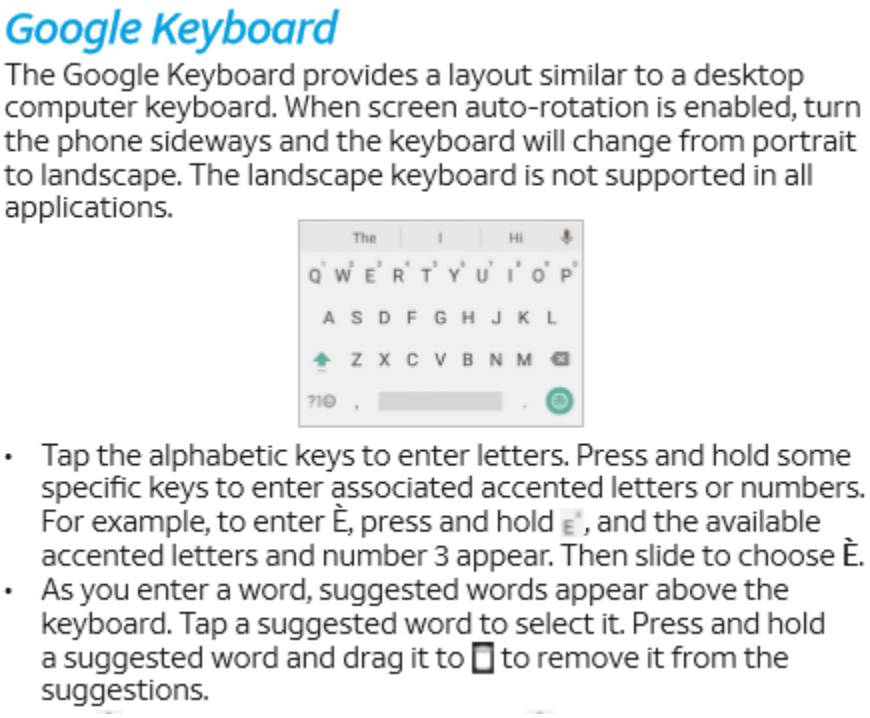


(Source: https://www.zteusa.com/axonm/)

95. By doing so, ZTE has directly infringed (literally and/or under the doctrine of equivalents) at least Claims 1 and 10 of the '049 Patent. ZTE's infringement in this regard is ongoing.

96. ZTE has infringed the '049 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale systems utilizing a method of configuring an input device for a data processing system, the input device having a set of display elements capable of displaying symbols.

97. The methods practiced by the accused products include selecting an input device layout.



Google Keyboard

The Google Keyboard provides a layout similar to a desktop computer keyboard. When screen auto-rotation is enabled, turn the phone sideways and the keyboard will change from portrait to landscape. The landscape keyboard is not supported in all applications.

- Tap the alphabetic keys to enter letters. Press and hold some specific keys to enter associated accented letters or numbers. For example, to enter È, press and hold E, and the available accented letters and number 3 appear. Then slide to choose È.
- As you enter a word, suggested words appear above the keyboard. Tap a suggested word to select it. Press and hold a suggested word and drag it to to remove it from the suggestions.

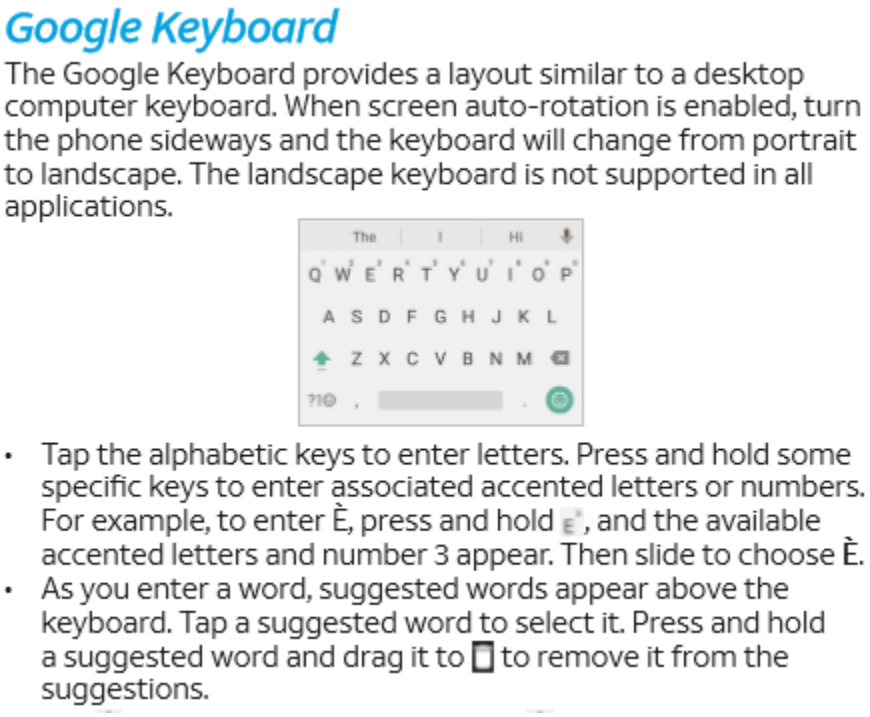
(Source : screenshot from PDF downloaded at https://www.zteusa.com/axon-m#support)

98. The methods practiced by the accused products include determining whether the selected input device layout is displayed.

99. The methods practiced by the accused products include determining a location of the selected input device layout when it is determined that the selected input device layout is not displayed.

100. The methods practiced by the accused products include retrieving the selected input device layout.

101. The methods practiced by the accused products include displaying a set of symbols on the display elements corresponding to the input device layout.



Google Keyboard

The Google Keyboard provides a layout similar to a desktop computer keyboard. When screen auto-rotation is enabled, turn the phone sideways and the keyboard will change from portrait to landscape. The landscape keyboard is not supported in all applications.

- Tap the alphabetic keys to enter letters. Press and hold some specific keys to enter associated accented letters or numbers. For example, to enter È, press and hold E, and the available accented letters and number 3 appear. Then slide to choose È.
- As you enter a word, suggested words appear above the keyboard. Tap a suggested word to select it. Press and hold a suggested word and drag it to to remove it from the suggestions.

(Source : screenshot from PDF downloaded at https://www.zteusa.com/axon-m#support)

102. ZTE has infringed the ‘049 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale systems having an input device for a data processing system, the input device having a set of display elements capable of displaying symbols.

103. The accused products include a memory having program instructions to display symbols on the input device.

Wave™ - Sentence Gesture

Wave - Sentence gesture allows you to enter words by dragging candidate words to the space key.

To enable and use Wave - Sentence gesture:

1. On the TouchPal Keyboard, tap > **Settings** > **Prediction** and check **Wave™ - Sentence gesture.**

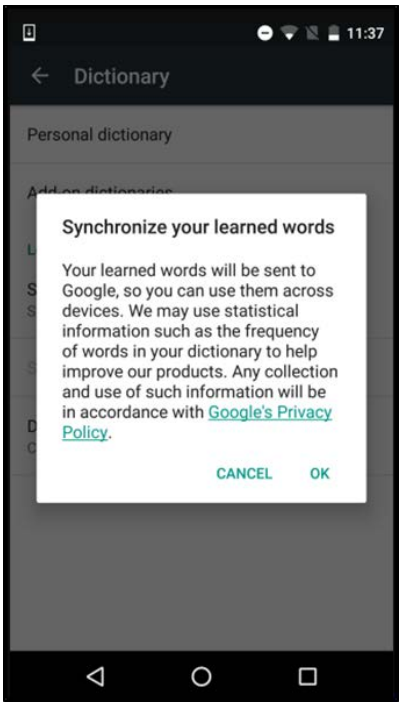
2. Press the **Back key** twice, tap inside a text field to open the keyboard, and then tap > **FULL** to switch to the FULL layout.
3. Tap or use Curve - Word gesture to enter the first word. As the first word appears on the text field, candidate words appear on the keyboard for you to choose from as the following word.
4. Drag the correct candidate word to the space key to add the word to the text field.

Notes:

- If no candidate word is correct, type the word as you normally would.
- Wave - Sentence gesture is only available in the FULL layout.

(Source : screenshot from PDF downloaded at https://www.zteusa.com/axon-m#support)

104. The accused products include a processor responsive to the program instructions to select an input device layout, determine whether the selected input device layout is displayed, determine a location of the selected input device layout when it is determined that the selected input device layout is not displayed, retrieve the selected input device layout from a network, and display a set of symbols on the display elements corresponding to the input device layout.



(Source: https://www.addictivetips.com/android/how-to-sync-your-dictionary-learned-words-between-android-devices/)

105. ZTE has had knowledge of the '049 Patent at least as of the date when it was notified of the filing of this action.

106. American Patents has been damaged as a result of the infringing conduct by ZTE alleged above. Thus, ZTE is liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

107. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '049 Patent.

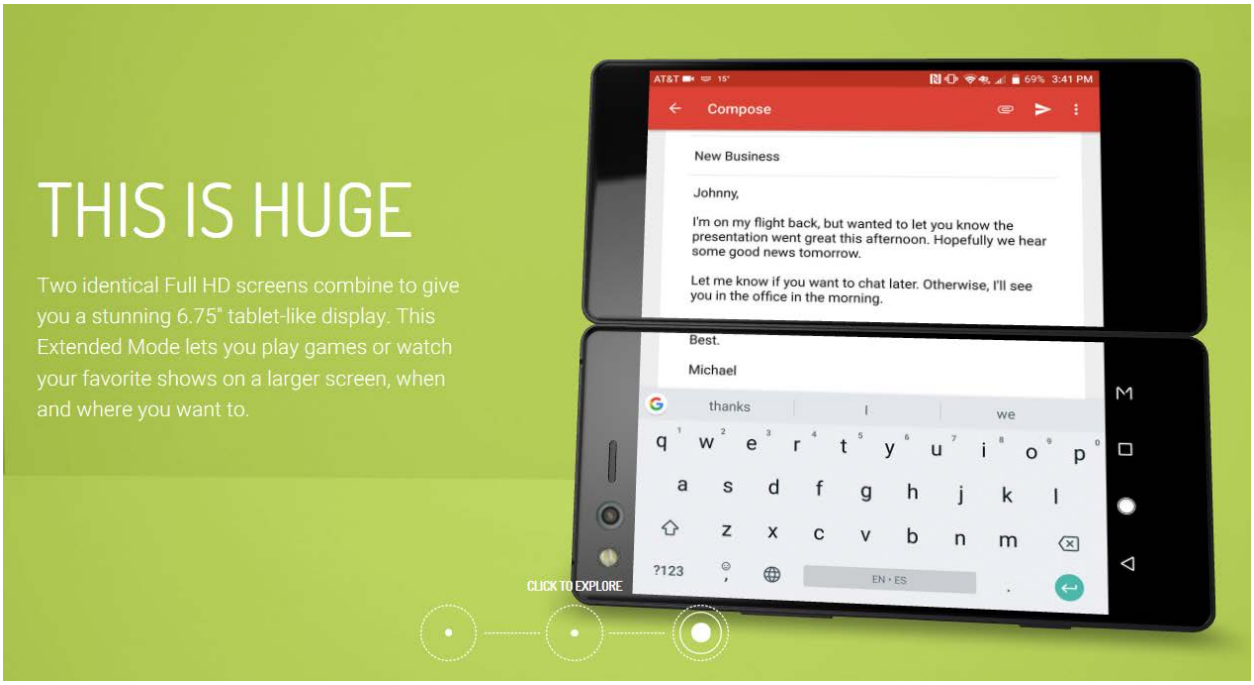
COUNT VII

DIRECT INFRINGEMENT OF U.S. PATENT NO. 6,301,626

108. On October 9, 2001, United States Patent No. 6,301,626 ("the '626 Patent") was duly and legally issued by the United States Patent and Trademark Office for an invention entitled "System For Dynamic Configuration Of An Input Device By Downloading An Input Device From Server If The Layout Is Not Already Displayed On The Input Device."

109. American Patents is the owner of the '626 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '626 Patent against infringers, and to collect damages for all relevant times.

110. ZTE made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems that include advanced keyboard layouts including, for example its Axon family of products having predictive text and other advanced keyboard layout capabilities ("accused products"):

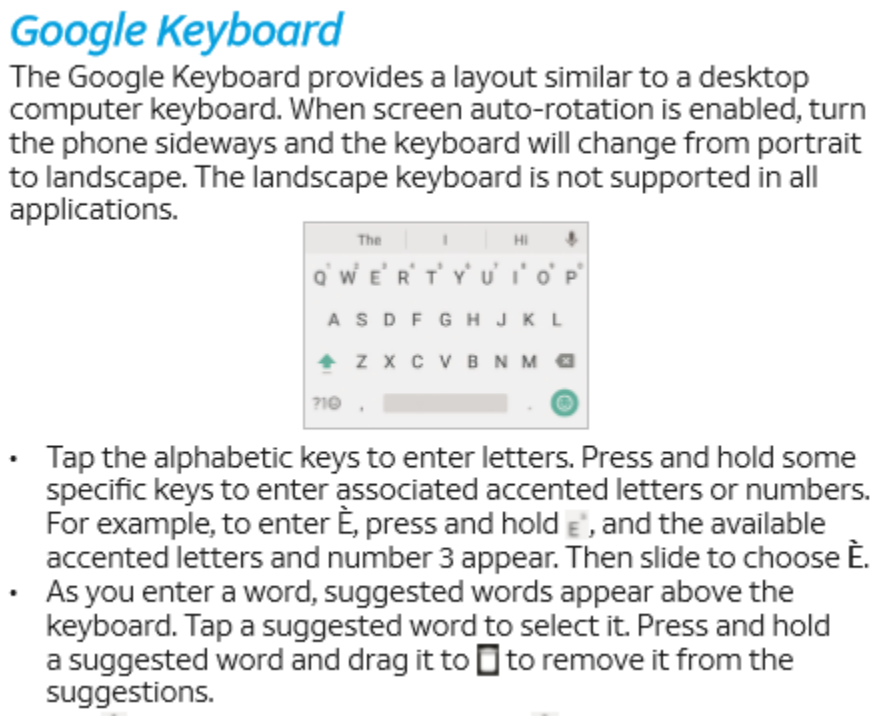


(Source: https://www.zteusa.com/axonm/)

111. By doing so, ZTE has directly infringed (literally and/or under the doctrine of equivalents) at least Claims 1 and 8 of the '626 Patent. ZTE's infringement in this regard is ongoing.

112. ZTE has infringed the '626 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale systems utilizing a computer-readable medium containing instructions for performing a method to configure an input device having a set of display elements capable of displaying symbols.

113. The methods performed by the accused products include selecting an input device layout.



Google Keyboard

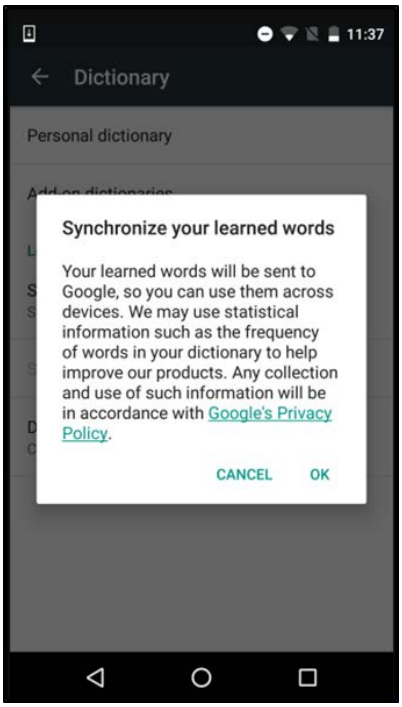
The Google Keyboard provides a layout similar to a desktop computer keyboard. When screen auto-rotation is enabled, turn the phone sideways and the keyboard will change from portrait to landscape. The landscape keyboard is not supported in all applications.

- Tap the alphabetic keys to enter letters. Press and hold some specific keys to enter associated accented letters or numbers. For example, to enter È, press and hold E, and the available accented letters and number 3 appear. Then slide to choose È.
- As you enter a word, suggested words appear above the keyboard. Tap a suggested word to select it. Press and hold a suggested word and drag it to to remove it from the suggestions.

(Source : screenshot from PDF downloaded at https://www.zteusa.com/axon-m#support)

114. The methods performed by the accused products include retrieving the input device layout from a network, wherein the retrieving step further includes the steps of determining if the identified input device layout is already displayed on the input device, and

downloading the identified input device layout over the network from a server having a plurality of input device layouts based upon the determination, and displaying a set of symbols on the display elements corresponding to the input device layout.



(Source: https://www.addictivetips.com/android/how-to-sync-your-dictionary-learned-words-between-android-devices/)

115. ZTE has infringed the '626 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale systems having a processor designed to configure an input device having a set of display elements capable of displaying symbols.

116. The accused products include means for identifying an input device layout.

Google Keyboard

The Google Keyboard provides a layout similar to a desktop computer keyboard. When screen auto-rotation is enabled, turn the phone sideways and the keyboard will change from portrait to landscape. The landscape keyboard is not supported in all applications.

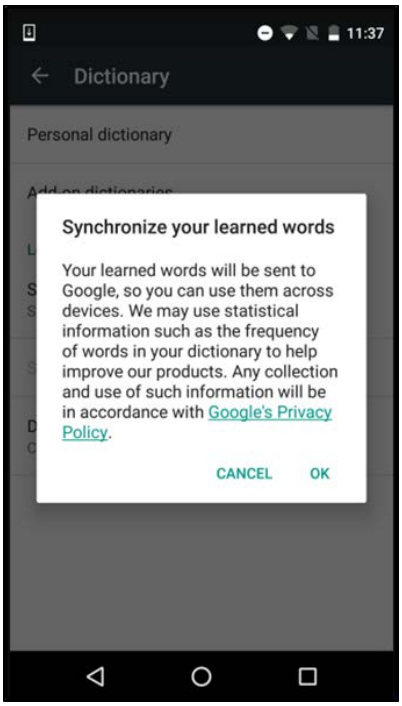
- Tap the alphabetic keys to enter letters. Press and hold some specific keys to enter associated accented letters or numbers. For example, to enter È, press and hold E, and the available accented letters and number 3 appear. Then slide to choose È.
- As you enter a word, suggested words appear above the keyboard. Tap a suggested word to select it. Press and hold a suggested word and drag it to to remove it from the suggestions.

(Source : screenshot from PDF downloaded at https://www.zteusa.com/axon-m#support)

117. The accused products include means for accessing the input device layout over a network.

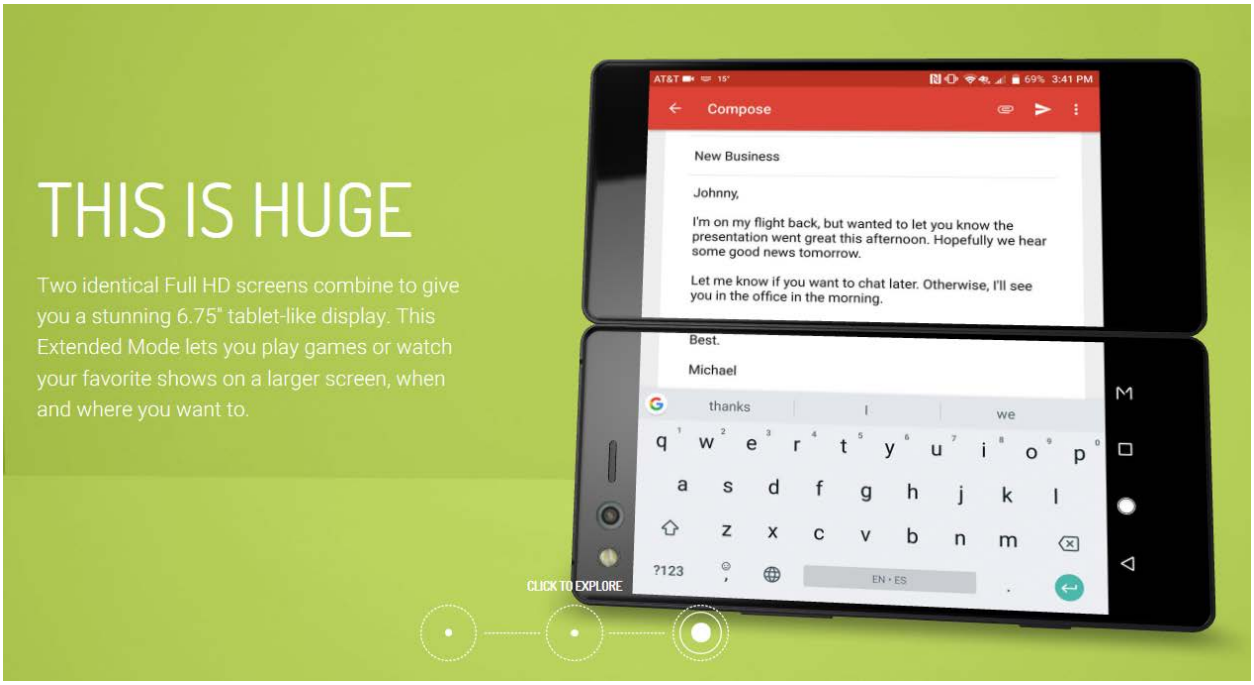
118. The accused products include means for determining if the identified input device layout is already displayed on the input device.

119. The accused products include means for downloading the identified input device layout over the network from a server having a plurality of input device layouts based upon the determination.



(Source: https://www.addictivetips.com/android/how-to-sync-your-dictionary-learned-words-between-android-devices/)

120. The accused products include means for displaying a set of symbols on the display elements corresponding to the input device layout.



(Source: https://www.zteusa.com/axonm/)

121. ZTE has had knowledge of the ‘626 Patent at least as of the date when it was notified of the filing of this action.

122. American Patents has been damaged as a result of the infringing conduct by ZTE alleged above. Thus, ZTE is liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

123. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the ‘626 Patent.

ADDITIONAL ALLEGATIONS REGARDING INDIRECT INFRINGEMENT

124. ZTE has also indirectly infringed the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent by inducing others to directly infringe the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent. ZTE has induced the end-users, ZTE’s customers, to directly infringe (literally and/or under the doctrine of equivalents) the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent by using the accused products. ZTE took active steps, directly and/or through contractual relationships with others, with the specific intent to cause them to use the accused products in a manner that infringes one or more claims of the patents-in-suit, including, for example, Claim 30 of the ‘782 Patent, Claim 1 of the ‘304 Patent, Claim 1 of the ‘458 Patent, Claim 5 of the ‘655 Patent, Claim 1 of the ‘090 Patent, Claims 1 and 10 of the ‘049 Patent, and Claims 1 and 8 of the ‘626 Patent. Such steps by ZTE included, among other things, advising or directing customers

and end-users to use the accused products in an infringing manner; advertising and promoting the use of the accused products in an infringing manner; and/or distributing instructions that guide users to use the accused products in an infringing manner. ZTE is performing these steps, which constitute induced infringement, with the knowledge of the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent and with the knowledge that the induced acts constitute infringement. ZTE was and is aware that the normal and customary use of the accused products by ZTE’s customers would infringe the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent. ZTE’s inducement is ongoing.

125. ZTE has also induced its affiliates, or third-party manufacturers, shippers, distributors, retailers, or other persons acting on its or its affiliates’ behalf, to directly infringe (literally and/or under the doctrine of equivalents) the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent by importing, selling or offering to sell the accused products. ZTE took active steps, directly and/or through contractual relationships with others, with the specific intent to cause such persons to import, sell, or offer to sell the accused products in a manner that infringes one or more claims of the patents-in-suit, including, for example, Claim 30 of the ‘782 Patent, Claim 1 of the ‘304 Patent, Claim 1 of the ‘458 Patent, Claim 5 of the ‘655 Patent, Claim 1 of the ‘090 Patent, Claims 1 and 10 of the ‘049 Patent, and Claims 1 and 8 of the ‘626 Patent. Such steps by ZTE included, among other things, making or selling the accused products outside of the United States for importation into or sale in the United States, or knowing that such importation or sale would occur; and directing, facilitating, or influencing its affiliates, or third-party manufacturers, shippers, distributors, retailers, or other persons acting on its or their behalf, to import, sell, or

offer to sell the accused products in an infringing manner. ZTE performed these steps, which constitute induced infringement, with the knowledge of the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent and with the knowledge that the induced acts would constitute infringement. ZTE performed such steps in order to profit from the eventual sale of the accused products in the United States. ZTE’s inducement is ongoing.

126. ZTE has also indirectly infringed by contributing to the infringement of the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent. ZTE has contributed to the direct infringement of the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent by the end-user of the accused products. The accused products have special features that are specially designed to be used in an infringing way and that have no substantial uses other than ones that infringe the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent, including, for example, Claim 30 of the ‘782 Patent, Claim 1 of the ‘304 Patent, Claim 1 of the ‘458 Patent, Claim 5 of the ‘655 Patent, Claim 1 of the ‘090 Patent, Claims 1 and 10 of the ‘049 Patent, and Claims 1 and 8 of the ‘626 Patent. The special features include improved wireless communication capabilities, initiation and/or control of Internet streamed content, and advanced keyboard layout capabilities in a manner that infringes the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent. The special features constitute a material part of the invention of one or more of the claims of the ‘782 Patent, the ‘304 Patent, the ‘458 Patent, the ‘655 Patent, the ‘090 Patent, the ‘049 Patent, and the ‘626 Patent and are not staple articles of commerce suitable for substantial non-infringing use. ZTE’s contributory infringement is ongoing.

127. Furthermore, ZTE has a policy or practice of not reviewing the patents of others (including instructing its employees to not review the patents of others), and thus has been willfully blind of American Patents' patent rights.

128. ZTE's actions are at least objectively reckless as to the risk of infringing valid patents and this objective risk was either known or should have been known by ZTE.

129. ZTE's direct and indirect infringement of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, the '090 Patent, the '049 Patent, and the '626 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard of American Patents' rights under the patents.

130. American Patents has been damaged as a result of the infringing conduct by ZTE alleged above. Thus, ZTE is liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

JURY DEMAND

American Patents hereby requests a trial by jury on all issues so triable by right.

PRAYER FOR RELIEF

American Patents requests that the Court find in its favor and against ZTE, and that the Court grant American Patents the following relief:

a. Judgment that one or more claims of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, the '090 Patent, the '049 Patent, and the '626 Patent have been infringed, either literally and/or under the doctrine of equivalents, by ZTE and/or all others acting in concert therewith;

b. A permanent injunction enjoining ZTE and its officers, directors, agents, servants,

affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in concert therewith from infringement of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, the '090 Patent, the '049 Patent, and the '626 Patent; or, in the alternative, an award of a reasonable ongoing royalty for future infringement of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, the '090 Patent, the '049 Patent, and the '626 Patent by such entities;

c. Judgment that ZTE account for and pay to American Patents all damages to and costs incurred by American Patents because of ZTE's infringing activities and other conduct complained of herein, including an award of all increased damages to which American Patents is entitled under 35 U.S.C. § 284;

d. That American Patents be granted pre-judgment and post-judgment interest on the damages caused by ZTE's infringing activities and other conduct complained of herein;

e. That this Court declare this an exceptional case and award American Patents its reasonable attorney's fees and costs in accordance with 35 U.S.C. § 285; and

f. That American Patents be granted such other and further relief as the Court may deem just and proper under the circumstances.

Dated: September 24, 2018

Respectfully submitted,

/s/ *Zachariah S. Harrington*

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