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

AMERICAN PATENTS LLC, Plaintiff, v. TCL CORP., TCL COMMUNICATION LTD., TCL COMMUNICATION TECHNOLOGY HOLDINGS LTD., TCL ELECTRONICS HOLDINGS LTD., TCL KING ELECTRICAL APPLIANCES (HUIZHOU) CO. LTD., and BLACKBERRY LIMITED, Defendants.	CIVIL ACTION NO. 4:18-cv-767 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 Defendants TCL Corp., TCL Communication Ltd., TCL Communication Technology Holdings Ltd., TCL Electronics Holdings Ltd., TCL King Electrical Appliances (Huizhou) Co. Ltd., and Blackberry Limited (collectively "Defendants"), 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. TCL Corp. is a corporation duly organized and existing under the laws of the People's Republic of China, having an address of No. 26, the Third Road, Zhongkai Avenue, Huizhou City, Guangdong, P.R. China 516006.

3. TCL Communication Ltd. is a corporation duly organized and existing under the laws of the People's Republic of China, having an address of 7/F, Block F4, TCL International E City Zhong Shan Yuan Road, Nanshan District, Shenzhen China.

4. TCL Communication Technology Holdings Ltd. is a corporation duly organized and existing under the laws of the People's Republic of China, having an address of Block F4, TCL Communication Technology Building, TCL International E City, Zhong Shan Yuan Road, Nanshan District, Shenzhen, Guangdong, P.R. China, 518052.

5. TCL Electronics Holdings Ltd. (formerly known as TCL Multimedia Technology Holdings Ltd.) is a corporation duly organized and existing under the laws of Hong Kong, having an address of 7th Floor, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong.

6. TCL King Electrical Appliances (Huizhou) Co. Ltd. is a company duly organized and existing under the laws of the People's Republic of China, having an address of No. 78 4th Huifeng Rd, Zhongkai New & High-Tech Industries Development Zone, Huizhou, Guangdong 516006 China.

7. The Defendants identified in paragraphs 2-6 above (collectively, "TCL") are an interrelated group of companies which together comprise one of the world's largest manufacturers of televisions and smartphones and one of the leading sellers of televisions and smartphones in the United States, including the TCL, Alcatel, and Blackberry brands.

8. The TCL defendants named above 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 judicial district in particular.

9. The TCL defendants named above share the same management, common ownership, advertising platforms, facilities, distribution chains and platforms, and accused product lines and products involving related technologies.

10. Thus, the TCL defendants named above operate as a unitary business venture and are jointly and severally liable for the acts of patent infringement alleged herein.

11. Blackberry Limited is a company duly organized and existing under the laws of Canada, having an address of 2200 University Avenue, E., Waterloo, Ontario N2K 0A7.

12. Blackberry directs, contracts with, and/or encourages manufacturers (e.g., TCL) to make, use, offer to sell, sell or import accused products under the Blackberry brand.

13. The parties to this action are properly joined under 35 U.S.C. § 299 because the right to relief asserted against defendants jointly and severally arises out of the same series of transactions or occurrences relating to the making and using of the same products or processes, including Blackberry smartphones and related processes. Additionally, questions of fact common to all defendants will arise in this action.

JURISDICTION AND VENUE

14. 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).

15. This Court has personal jurisdiction over Defendants pursuant to due process and/or the Texas Long Arm Statute because, *inter alia*, (i) Defendants have done and continue to do business in Texas and (ii) Defendants have committed and continue to commit acts of patent infringement in the State of Texas, including making, using, offering to sell, and/or selling accused products in Texas, and/or importing accused products into Texas, including by Internet sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in Texas, and/or committing a least a portion of any other infringements alleged herein. In addition, or in the alternative, this Court has personal jurisdiction over Defendants pursuant to Fed. R. Civ. P. 4(k)(2).

16. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391(b), 1391(c), and 1400(b) because (i) Defendants have done and continue to do business in this district; (ii) Defendants have committed and continue to commit acts of patent infringement in this district, including making, using, offering to sell, and/or selling accused products in this district, and/or importing accused products into this district, including by internet sales and sales via retail and wholesale stores, and/or inducing others to commit acts of patent infringement in this district; and (iii) Defendants are foreign entities.

17. Venue is proper as to Defendants, which are organized under the laws of the People's Republic of China, Hong Kong, and Canada. 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."

BACKGROUND

18. 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.

19. 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.

20. 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.

21. 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.

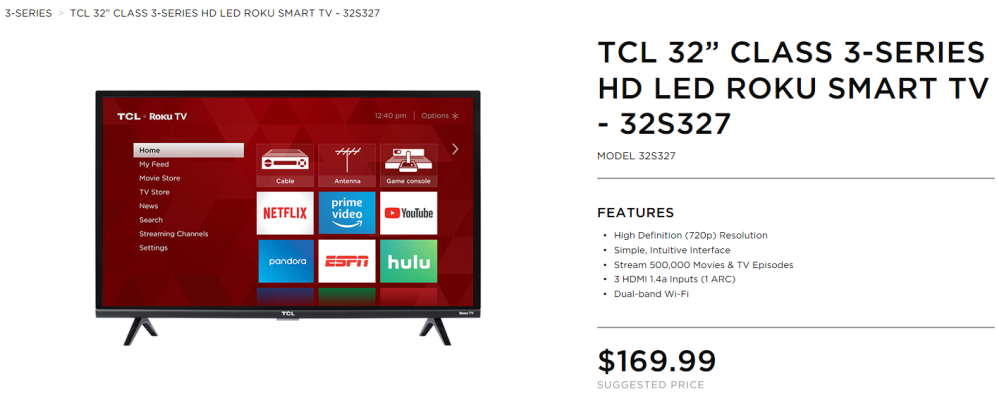
COUNT I

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

22. 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."

23. 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.

24. Defendants made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including, for example, their TCL brand RokuTV, Alcatel brand Linkzone, or Blackberry brand DTEK families of products that include 802.11ac and/or LTE capabilities ("accused products"):



Source: https://www.tclusa.com/products/home-theater/3-series/tcl-32-class-3-series-hd-led-roku-smart-tv-32s327

USB File Format Compatibility	Video: MKV (H.264), MP4, MOV (H.264), TS (H.264) Music: AAC, MP3, WMA, WAV (PCM), AIFF, FLAC, AC3 Photo: JPG, PNG, GIF
Wireless Connection	802.11 2x2 Dual Band

Source: https://www.tclusa.com/products/home-theater/3-series/tcl-32-class-3-series-fhd-led-roku-smart-tv-32s327

Source: Photo of Product

GSD

PRODUCTS SPECIFICATION

WC0HR2601

1. General Description

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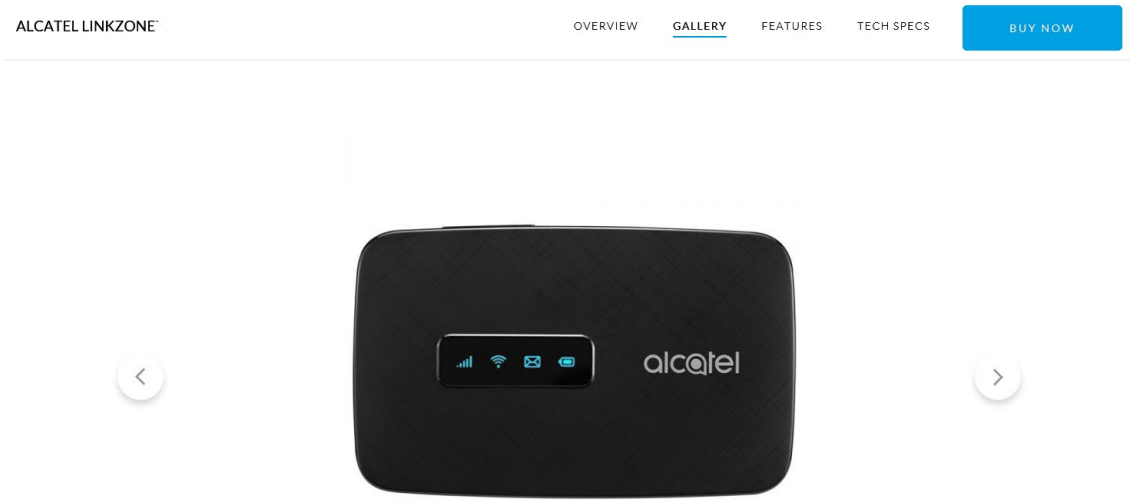
Source: https://fccid.io/2AC23-WC0HR2601/Users-Manual/Users-manual-3290425



Source: https://us.alcatelmobile.com/alcatel-linkzone/

CONNECTIVITY

4G LTE cat4
FDD DL up to 150 Mbps/ UL 50Mbps
WiFi 802.11b/g/n – 2.4 GHz
LTE DL 2×2 MiMo
FDD LTE: B2/4/12
WCDMA: B1/2/4/5
GSM: B2/3/5/8
802.11b/g/n – 2.4 GHz
USB 2.0

Source: https://us.alcatelmobile.com/alcatel-linkzone/

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/overview

Wi-Fi®	802.11 b/g/n 2.4 GHz
	802.11 a/n 5GHz
	802.11 ac 5GHz
	4G Mobile Hotspot
	Wi-Fi Direct

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

	Network bands[2]	DTEK60
Networks & Connectivity		North America and Latin America: LTE Advanced, with speeds up to 300 Mbps for data downloads FD-LTE 1, 2, 3, 4, 5, 7, 12, 17, 20, 29 (2100/1900/1800/1700/850/2600/700/700/800/700/2300 MHz) HSPA+ 1, 2, 4, 5, 8 (2100/1900/1700/850/900 MHz) Quad band GSM/GPRS/EDGE (850/900/1800/1900 MHz) Europe, Middle East, Africa and Asia Pacific: LTE Advanced, with speeds up to 300 Mbps for data downloads FD-LTE 1, 2, 3, 4, 5, 7, 8, 19, 20, 28A (2100/1900/1800/2600/900/800/700 MHz) TD-LTE 38, 40, 41 (2600/2300/2500 MHz) HSPA+ 1, 2, 4, 5/6, 8 (2100/1900/850/900 MHz) Quad band GSM/GPRS/EDGE (850/900/1800/1900 MHz)

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

Snap Dragon 820

At the heart of this phone is the Snap Dragon 820 chipset. This provides a number of compelling advantages, which include improved quad-core performance, QuickCharge 3.0, improved LTE support, MU-MIMO Wi-Fi, fingerprint reader support, improved camera support (both resolution and HDR), advanced sound support, and it will support up to a 2TB SD Card (Yes. 2TB—which you actually can't buy yet).

In terms of what this means, you get a 2x performance difference over the Snapdragon 810, 3X network improvement when connected to a current generation LTE network, 40X graphics improvement, and zero shutter lag in the camera.

My favorite features are MU-MIMO Wi-Fi support which screams if you have a MU-MIMO router (I have 4) and the QuickCharge 3.0 feature which provides 80 percent charge in 30 minutes. Often a lifesaver.

In short there are few phones in the market that outperform this one.

Source: https://techspective.net/2016/11/12/blackberry-dtek60-yes-can-fall-love-blackberry/

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

26. Defendants have 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.

27. 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.

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

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

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

31. 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.

USB File Format Compatibility	Video: MKV (H.264), MP4, MOV (H.264), TS (H.264) Music: AAC, MP3, WMA, WAV (PCM), AIFF, FLAC, AC3 Photo: JPG, PNG, GIF
Wireless Connection	802.11 2x2 Dual Band

Source: https://www.tclusa.com/products/home-theater/3-series/tcl-32-class-3-series-fhd-led-roku-smart-tv-32s327

Source: Photo of Product

GSD

PRODUCTS SPECIFICATION

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Source: https://fccid.io/2AC23-WC0HR2601/Users-Manual/Users-manual-3290425

CONNECTIVITY

4G LTE cat4
FDD DL up to 150 Mbps/ UL 50Mbps
WiFi 802.11b/g/n – 2.4 GHz
LTE DL 2×2 MiMo
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WCDMA: B1/2/4/5
GSM: B2/3/5/8
802.11b/g/n – 2.4 GHz
USB 2.0

Source: https://us.alcatelmobile.com/alcatel-linkzone/

Wi-Fi®	802.11 b/g/n 2.4 GHz
	802.11 a/n 5GHz
	802.11 ac 5GHz
	4G Mobile Hotspot
	Wi-Fi Direct

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

	Network bands[2]	DTEK60
Networks & Connectivity		North America and Latin America: LTE Advanced, with speeds up to 300 Mbps for data downloads FD-LTE 1, 2, 3, 4, 5, 7, 12, 17, 20, 29 (2100/1900/1800/1700/850/2600/700/700/800/700/2300 MHz) HSPA+ 1, 2, 4, 5, 8 (2100/1900/1700/850/900 MHz) Quad band GSM/GPRS/EDGE (850/900/1800/1900 MHz) Europe, Middle East, Africa and Asia Pacific: LTE Advanced, with speeds up to 300 Mbps for data downloads FD-LTE 1, 2, 3, 4, 5, 7, 8, 19, 20, 28A (2100/1900/1800/2600/900/800/700 MHz) TD-LTE 38, 40, 41 (2600/2300/2500 MHz) HSPA+ 1, 2, 4, 5/6, 8 (2100/1900/850/900 MHz) Quad band GSM/GPRS/EDGE (850/900/1800/1900 MHz)

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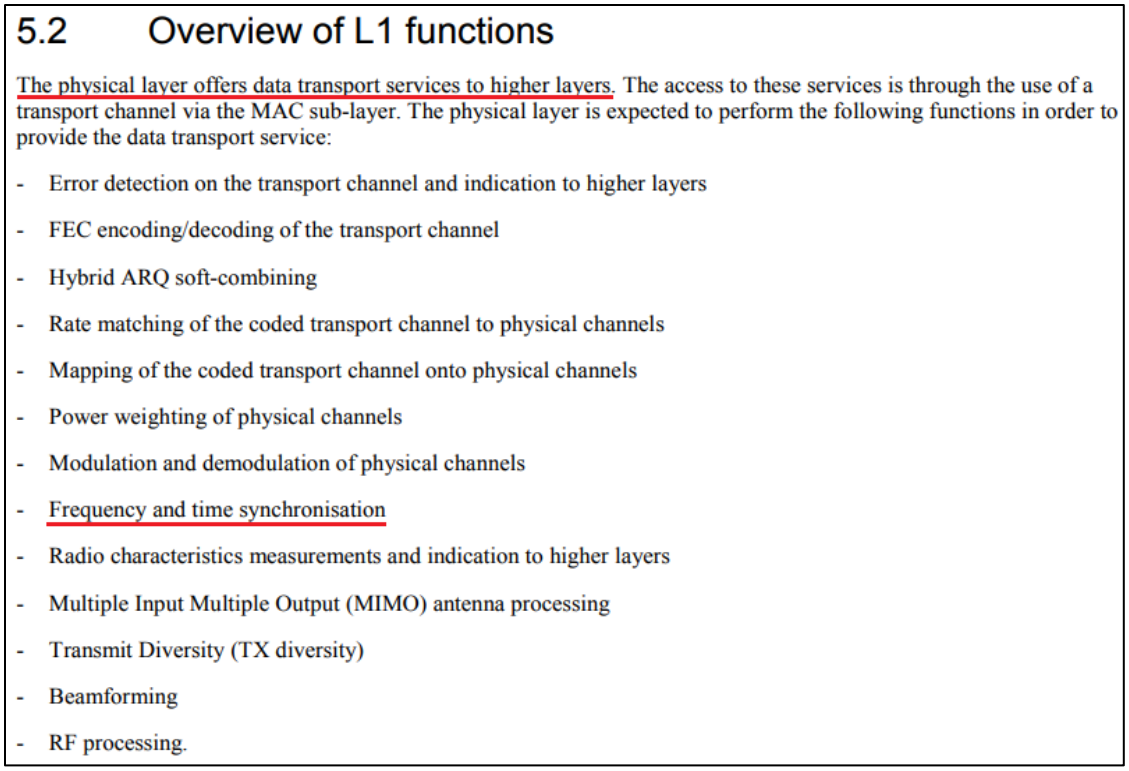


5.2 Overview of L1 functions

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)

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

33. Defendants have had knowledge of the '782 Patent at least as of the date when they were notified of the filing of this action.

34. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are 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.

35. 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.

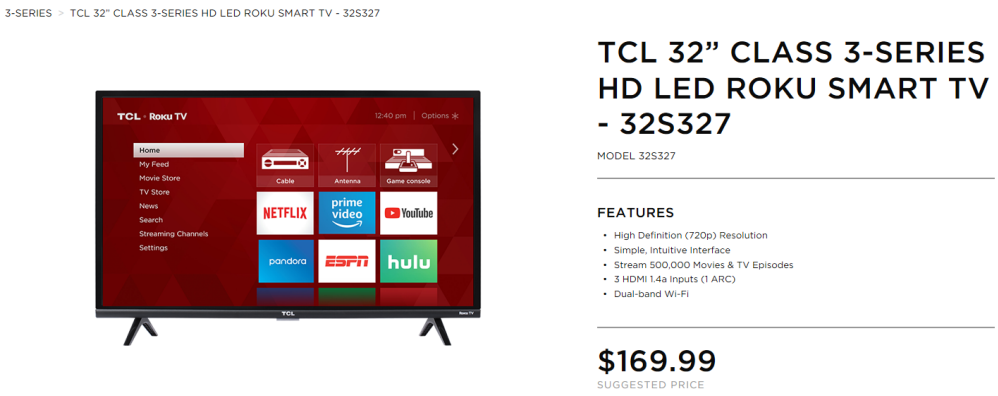
COUNT II

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

36. 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."

37. 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.

38. Defendants made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including, for example, their TCL brand RokuTV, Alcatel brand Linkzone, or Blackberry brand DTEK families of products that include 802.11ac and/or LTE capabilities ("accused products"):



Source: https://www.tclusa.com/products/home-theater/3-series/tcl-32-class-3-series-hd-led-roku-smart-tv-32s327

USB File Format Compatibility	Video: MKV (H.264), MP4, MOV (H.264), TS (H.264) Music: AAC, MP3, WMA, WAV (PCM), AIFF, FLAC, AC3 Photo: JPG, PNG, GIF
Wireless Connection	802.11 2x2 Dual Band

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Source: Photo of Product

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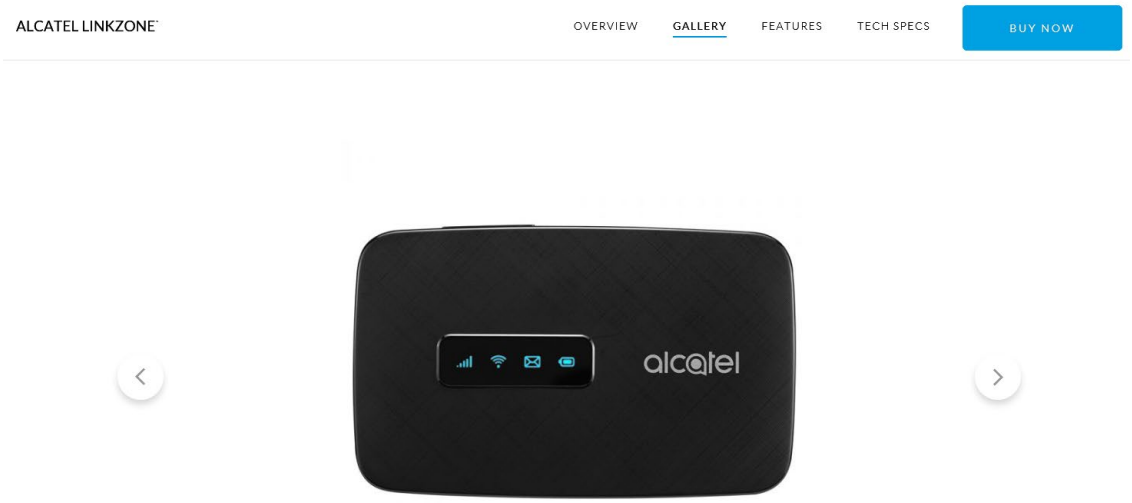

Source: https://us.alcatelmobile.com/alcatel-linkzone/

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LTE DL 2×2 MiMo
FDD LTE: B2/4/12
WCDMA: B1/2/4/5
GSM: B2/3/5/8
802.11b/g/n – 2.4 GHz
USB 2.0

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Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/overview

Wi-Fi®	802.11 b/g/n 2.4 GHz
	802.11 a/n 5GHz
	802.11 ac 5GHz
	4G Mobile Hotspot
	Wi-Fi Direct

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

	Network bands[2]	DTEK60
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39. By doing so, Defendants have directly infringed (literally and/or under the doctrine of equivalents) at least Claim 1 of the '304 Patent. Defendants' infringement in this regard is ongoing.

40. Defendants have 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.

41. 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).

42. 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.

43. 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.

USB File Format Compatibility	Video: MKV (H.264), MP4, MOV (H.264), TS (H.264) Music: AAC, MP3, WMA, WAV (PCM), AIFF, FLAC, AC3 Photo: JPG, PNG, GIF
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4G LTE cat4
FDD DL up to 150 Mbps/ UL 50Mbps
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LTE DL 2×2 MiMo
FDD LTE: B2/4/12
WCDMA: B1/2/4/5
GSM: B2/3/5/8
802.11b/g/n – 2.4 GHz
USB 2.0

Source: https://us.alcatelmobile.com/alcatel-linkzone/

Wi-Fi®	802.11 b/g/n 2.4 GHz
	802.11 a/n 5GHz
	802.11 ac 5GHz
	4G Mobile Hotspot
	Wi-Fi Direct

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

	Network bands[2]	DTEK60
Networks & Connectivity		North America and Latin America: LTE Advanced, with speeds up to 300 Mbps for data downloads FD-LTE 1, 2, 3, 4, 5, 7, 12, 17, 20, 29 (2100/1900/1800/1700/850/2600/700/700/800/700/2300 MHz) HSPA+ 1, 2, 4, 5, 8 (2100/1900/1700/850/900 MHz) Quad band GSM/GPRS/EDGE (850/900/1800/1900 MHz) Europe, Middle East, Africa and Asia Pacific: LTE Advanced, with speeds up to 300 Mbps for data downloads FD-LTE 1, 2, 3, 4, 5, 7, 8, 19, 20, 28A (2100/1900/1800/2600/900/800/700 MHz) TD-LTE 38, 40, 41 (2600/2300/2500 MHz) HSPA+ 1, 2, 4, 5/6, 8 (2100/1900/850/900 MHz) Quad band GSM/GPRS/EDGE (850/900/1800/1900 MHz)

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

Snap Dragon 820

At the heart of this phone is the Snap Dragon 820 chipset. This provides a number of compelling advantages, which include improved quad-core performance, QuickCharge 3.0, improved LTE support, MU-MIMO Wi-Fi, fingerprint reader support, improved camera support (both resolution and HDR), advanced sound support, and it will support up to a 2TB SD Card (Yes. 2TB—which you actually can't buy yet).

In terms of what this means, you get a 2x performance difference over the Snapdragon 810, 3X network improvement when connected to a current generation LTE network, 40X graphics improvement, and zero shutter lag in the camera.

My favorite features are MU-MIMO Wi-Fi support which screams if you have a MU-MIMO router (I have 4) and the QuickCharge 3.0 feature which provides 80 percent charge in 30 minutes. Often a lifesaver.

In short there are few phones in the market that outperform this one.

Source: https://techspective.net/2016/11/12/blackberry-dtek60-yes-can-fall-love-blackberry/

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)

44. 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.

45. Blackberry Limited has had knowledge of the '304 Patent at least as of January 3, 2014, when U.S. Patent Application Publication No. US2002/0181390, the application leading to the '304 Patent, was cited in an information disclosure statement during the prosecution of U.S. Patent No. 8,811,339, which was assigned to Blackberry Limited. Blackberry employees Mo-Han Fong, Hang Zhang, Sophie Vrzic, and Robert Novak, who are listed as inventors on U.S. Patent No. 8,811,339, and others involved in the prosecution of the patent, have had knowledge of the '049 Patent at least as of January 3, 2014.

46. Defendants have had knowledge of the '304 Patent at least as of the date when they were notified of the filing of this action.

47. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are 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.

48. 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.

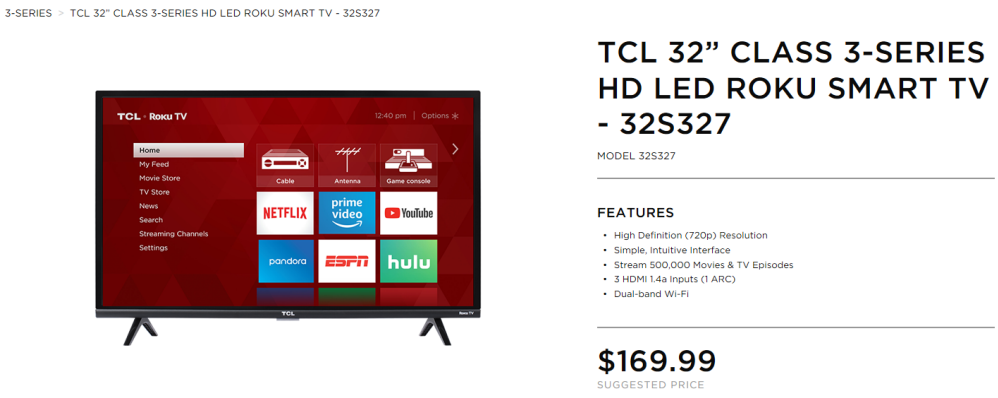
COUNT III

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

49. 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."

50. 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.

51. Defendants made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including, for example, their TCL brand RokuTV, Alcatel brand Linkzone, or Blackberry brand DTEK families of products that include 802.11ac and/or LTE capabilities ("accused products"):



Source: https://www.tclusa.com/products/home-theater/3-series/tcl-32-class-3-series-hd-led-roku-smart-tv-32s327

USB File Format Compatibility	Video: MKV (H.264), MP4, MOV (H.264), TS (H.264) Music: AAC, MP3, WMA, WAV (PCM), AIFF, FLAC, AC3 Photo: JPG, PNG, GIF
Wireless Connection	802.11 2x2 Dual Band

Source: https://www.tclusa.com/products/home-theater/3-series/tcl-32-class-3-series-fhd-led-roku-smart-tv-32s327

Source: Photo of Product

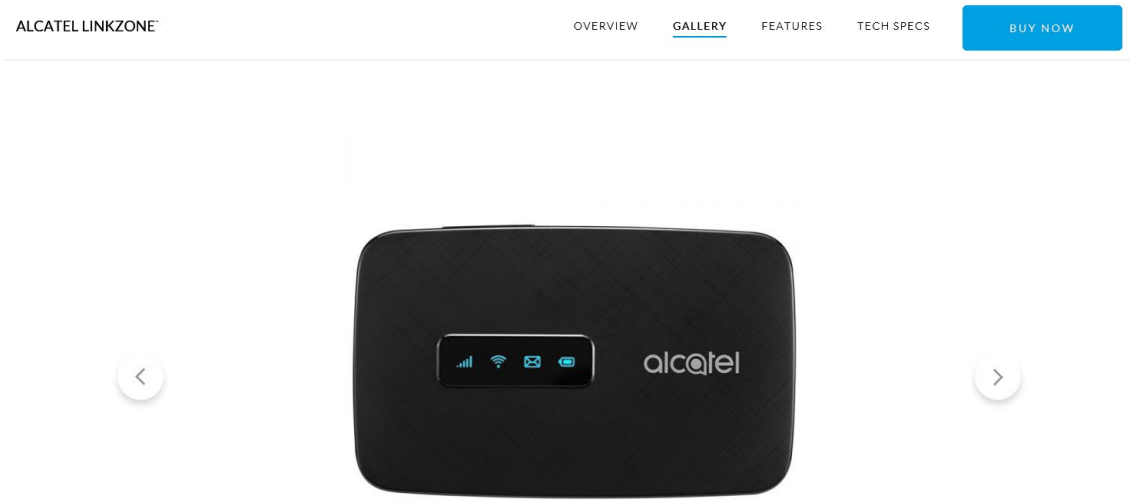
GSD

PRODUCTS SPECIFICATION WC0HR2601

1. General Description

This document is to specify the product requirements for 802.11a/b/g/n/ac and Bluetooth USB Module. This Card is based on REALTEK RTL8812BU chipset .It is a complete dual-band(2.4GHz and 5GHz)WIFI 2×2 MIMO MAC/PHY/Radio System-on-a-Chip. This module provides a high level of integration with a dual-stream IEEE 802.11ac MAC/ base band /radio.The WLAN operation supports 20MHz,40MHz and 80MHz channels for data rates up to 866.7Mbps. It is also backward complied with IEEE 802.11a standard from 5.15~5.825GHz wideband and IEEE 802.11b/g standard from 2.4~2.5GHz. It can be used to provide up to 54Mbps for IEEE 802.11a and IEEE 802.11g, 11Mbps for IEEE 802.11b and 300Mbps for IEEE 802.11n.

Source: https://fccid.io/2AC23-WC0HR2601/Users-Manual/Users-manual-3290425



Source: https://us.alcatelmobile.com/alcatel-linkzone/

CONNECTIVITY

4G LTE cat4
FDD DL up to 150 Mbps/ UL 50Mbps
WiFi 802.11b/g/n – 2.4 GHz
LTE DL 2×2 MiMo
FDD LTE: B2/4/12
WCDMA: B1/2/4/5
GSM: B2/3/5/8
802.11b/g/n – 2.4 GHz
USB 2.0

Source: https://us.alcatelmobile.com/alcatel-linkzone/

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/overview

Wi-Fi®	802.11 b/g/n 2.4 GHz
	802.11 a/n 5GHz
	802.11 ac 5GHz
	4G Mobile Hotspot
	Wi-Fi Direct

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

	Network bands[2]	DTEK60
Networks & Connectivity		North America and Latin America: LTE Advanced, with speeds up to 300 Mbps for data downloads FD-LTE 1, 2, 3, 4, 5, 7, 12, 17, 20, 29 (2100/1900/1800/1700/850/2600/700/700/800/700/2300 MHz) HSPA+ 1, 2, 4, 5, 8 (2100/1900/1700/850/900 MHz) Quad band GSM/GPRS/EDGE (850/900/1800/1900 MHz) Europe, Middle East, Africa and Asia Pacific: LTE Advanced, with speeds up to 300 Mbps for data downloads FD-LTE 1, 2, 3, 4, 5, 7, 8, 19, 20, 28A (2100/1900/1800/2600/900/800/700 MHz) TD-LTE 38, 40, 41 (2600/2300/2500 MHz) HSPA+ 1, 2, 4, 5/6, 8 (2100/1900/850/900 MHz) Quad band GSM/GPRS/EDGE (850/900/1800/1900 MHz)

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In terms of what this means, you get a 2x performance difference over the Snapdragon 810, 3X network improvement when connected to a current generation LTE network, 40X graphics improvement, and zero shutter lag in the camera.

My favorite features are MU-MIMO Wi-Fi support which screams if you have a MU-MIMO router (I have 4) and the QuickCharge 3.0 feature which provides 80 percent charge in 30 minutes. Often a lifesaver.

In short there are few phones in the market that outperform this one.

Source: https://techspective.net/2016/11/12/blackberry-dtek60-yes-can-fall-love-blackberry/

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

53. Defendants have 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.

54. 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.

55. 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.

USB File Format Compatibility	Video: MKV (H.264), MP4, MOV (H.264), TS (H.264) Music: AAC, MP3, WMA, WAV (PCM), AIFF, FLAC, AC3 Photo: JPG, PNG, GIF
Wireless Connection	802.11 2x2 Dual Band

Source: https://www.tclusa.com/products/home-theater/3-series/tcl-32-class-3-series-fhd-led-roku-smart-tv-32s327

Source: Photo of Product

GSD

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WC0HR2601

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This document is to specify the product requirements for 802.11a/b/g/n/ac and Bluetooth USB Module. This Card is based on REALTEK RTL8812BU chipset .It is a complete dual-band(2.4GHz and 5GHz)WIFI 2×2 MIMO MAC/PHY/Radio System-on-a-Chip. This module provides a high level of integration with a dual-stream IEEE 802.11ac MAC/ base band /radio.The WLAN operation supports 20MHz,40MHz and 80MHz channels for data rates up to 866.7Mbps. It is also backward complied with IEEE 802.11a standard from 5.15~5.825GHz wideband and IEEE 802.11b/g standard from 2.4~2.5GHz. It can be used to provide up to 54Mbps for IEEE 802.11a and IEEE 802.11g, 11Mbps for IEEE 802.11b and 300Mbps for IEEE 802.11n.

Source: https://fccid.io/2AC23-WC0HR2601/Users-Manual/Users-manual-3290425

CONNECTIVITY

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FDD DL up to 150 Mbps/ UL 50Mbps
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LTE DL 2×2 MiMo
FDD LTE: B2/4/12
WCDMA: B1/2/4/5
GSM: B2/3/5/8
802.11b/g/n – 2.4 GHz
USB 2.0

Source: https://us.alcatelmobile.com/alcatel-linkzone/

Wi-Fi®	802.11 b/g/n 2.4 GHz
	802.11 a/n 5GHz
	802.11 ac 5GHz
	4G Mobile Hotspot
	Wi-Fi Direct

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

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Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

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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)

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

57. 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.

58. TCL Communication Ltd. has had knowledge of the '458 Patent at least as of December 11, 2013, when U.S. Patent Application Publication No. US2006/0239370, the application leading to the '458 Patent, was cited by the examiner and used in multiple prior art rejections during the prosecution of U.S. Patent No. 9,036,999, which was assigned to Alcatel-Lucent, the company that licenses the Alcatel brand name to TCL Communication Ltd. Alcatel-Lucent employees Noriaki Kaneda, Timo Pfau, and Qi Yang, who are listed as inventors on U.S. Patent No. 9,036,999, and others involved in the prosecution of the patent, including Andrew Ralston and Woo (Kenneth) Rhim of Hitt Gaines, PC in Richardson, TX, have had knowledge of the '458 Patent at least as of December 11, 2013.

59. Defendants have had knowledge of the '458 Patent at least as of the date when they were notified of the filing of this action.

60. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are 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.

61. 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.

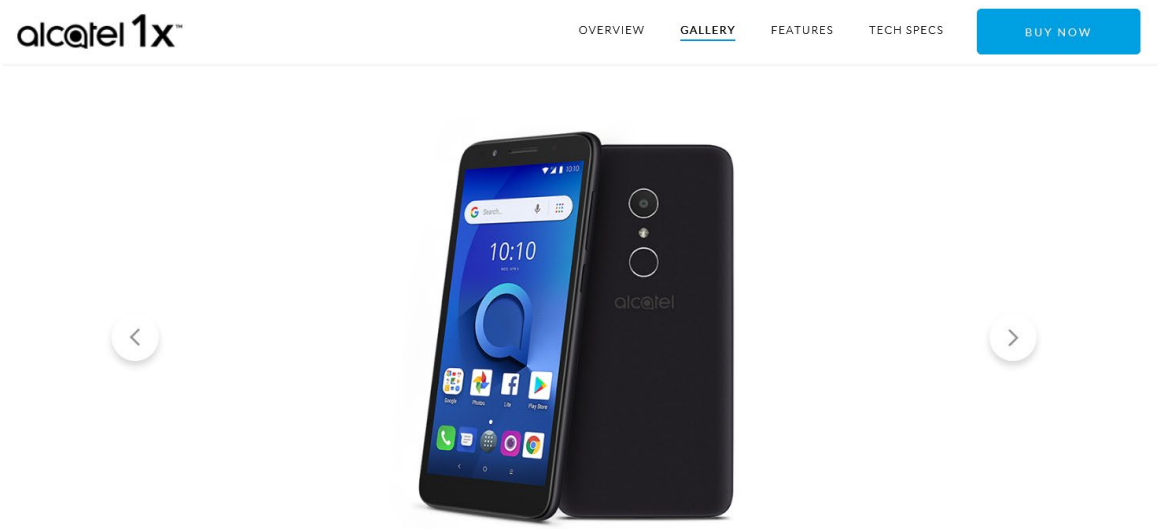
COUNT IV

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

62. 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."

63. 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.

64. Defendants 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, their Alcatel brand 1X or Blackberry brand DTEK families of products ("accused products"):



Source: https://us.alcatelmobile.com/alcatel1x/

OPERATING SYSTEM

Android™ Oreo™ (Go Edition)

Source: https://us.alcatelmobile.com/alcatel1x/

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/overview

OS	Operating system	Android OS

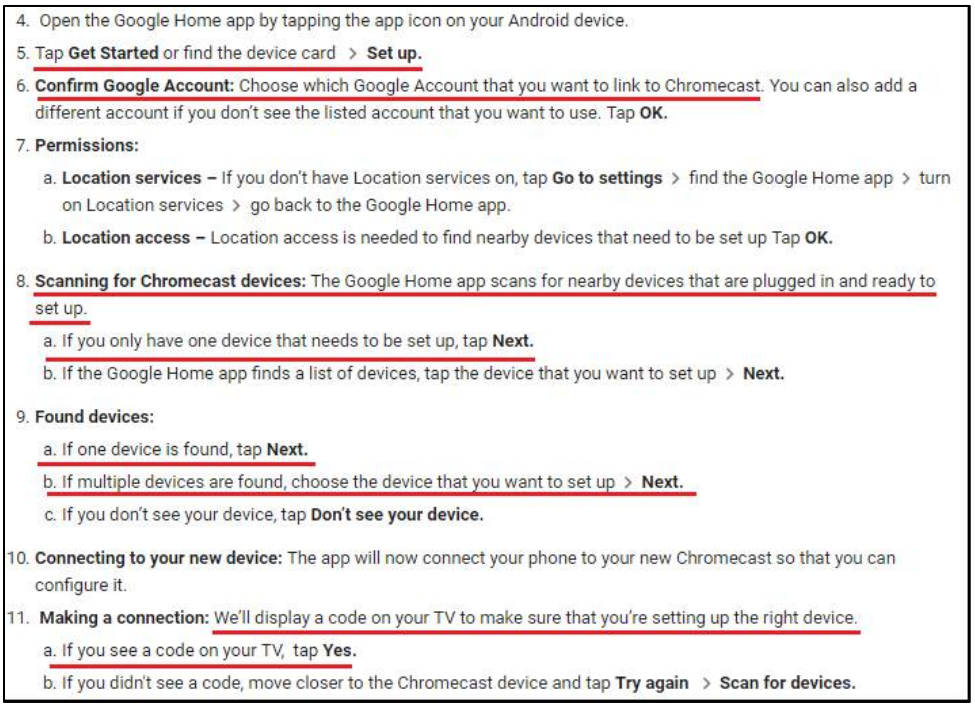
Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

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

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

67. 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.

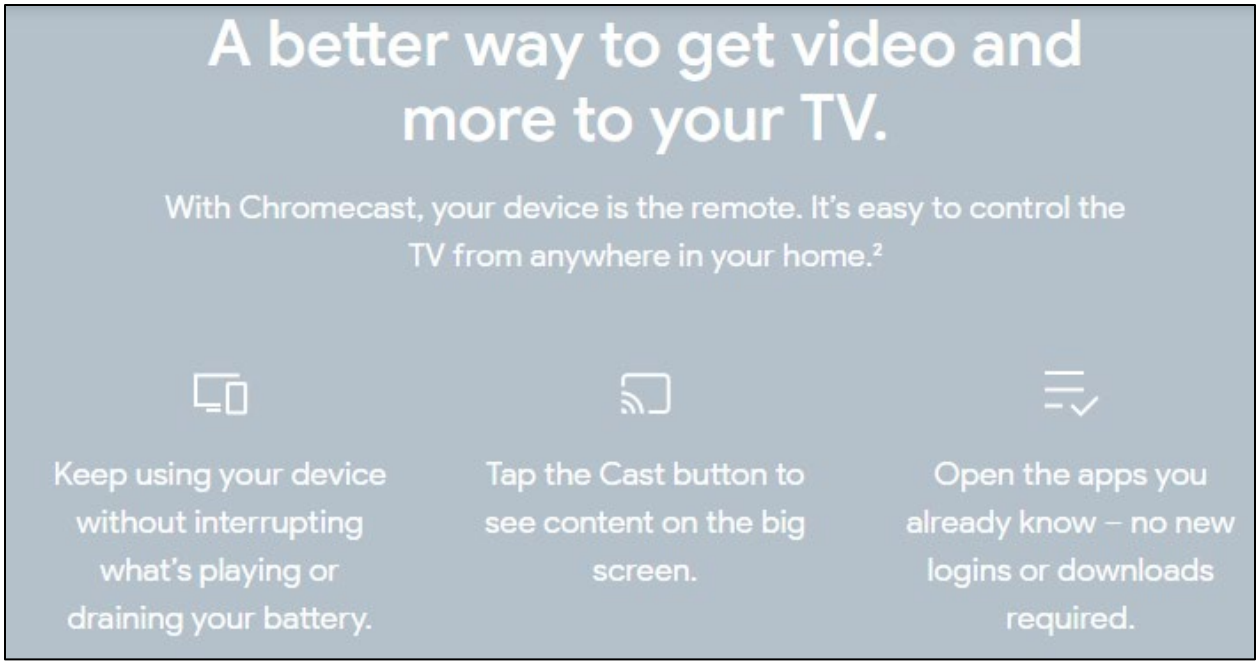
68. The methods practiced by the accused products include receiving, at the network element, a request from a user to connect to the network element.



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)

69. 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)

70. 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.

71. Defendants have had knowledge of the '655 Patent at least as of the date when they were notified of the filing of this action.

72. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are 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.

73. 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.

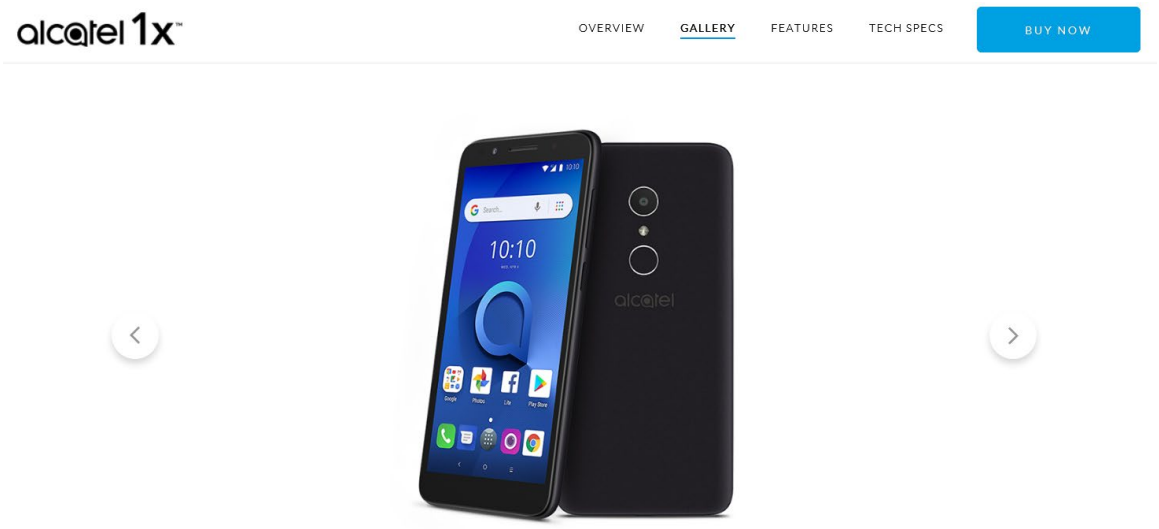
COUNT V

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

74. 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."

75. 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.

76. Defendants 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, their Alcatel brand 1X or Blackberry brand DTEK families of products ("accused products"):



Source: https://us.alcatelmobile.com/alcatel1x/

OPERATING SYSTEM

Android™ Oreo™ (Go Edition)

Source: https://us.alcatelmobile.com/alcatel1x/

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/overview

OS	Operating system	Android OS

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

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

78. Defendants have 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.

79. 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.
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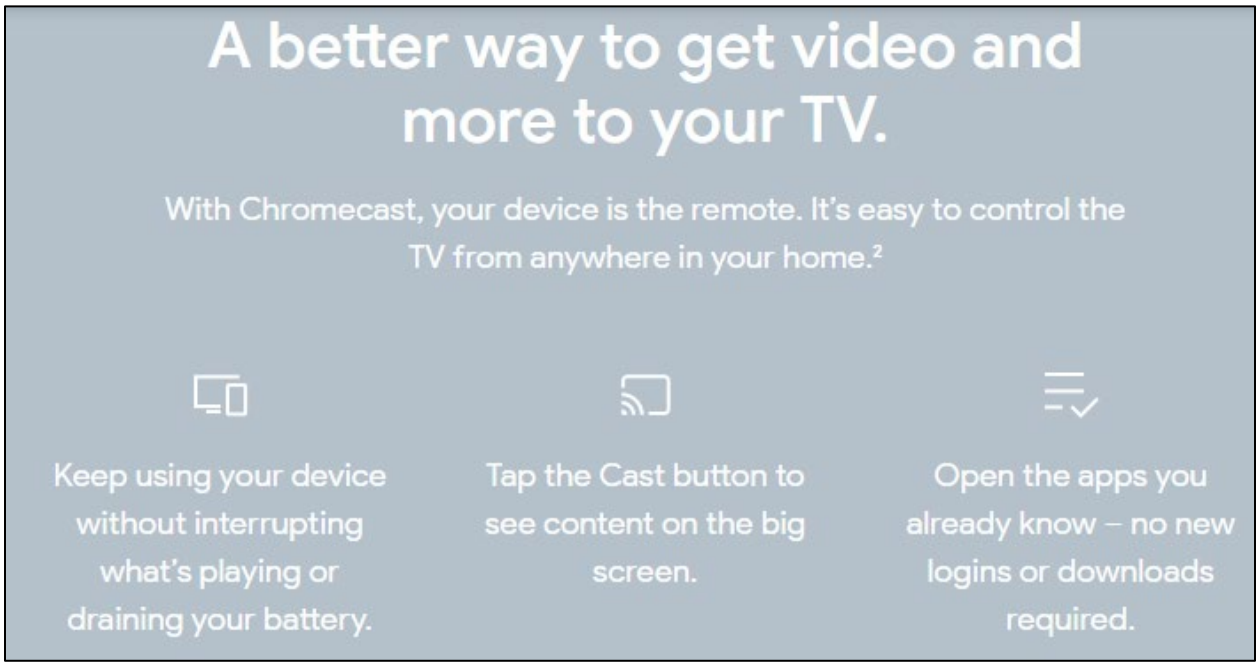
(Source: https://support.google.com/chromecast/answer/2998456?co=GENIE.Platform%3DAndroid&oco=1)

80. 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)

81. 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.

82. Defendants have had knowledge of the '090 Patent at least as of the date when they were notified of the filing of this action.

83. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are 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.

84. 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.

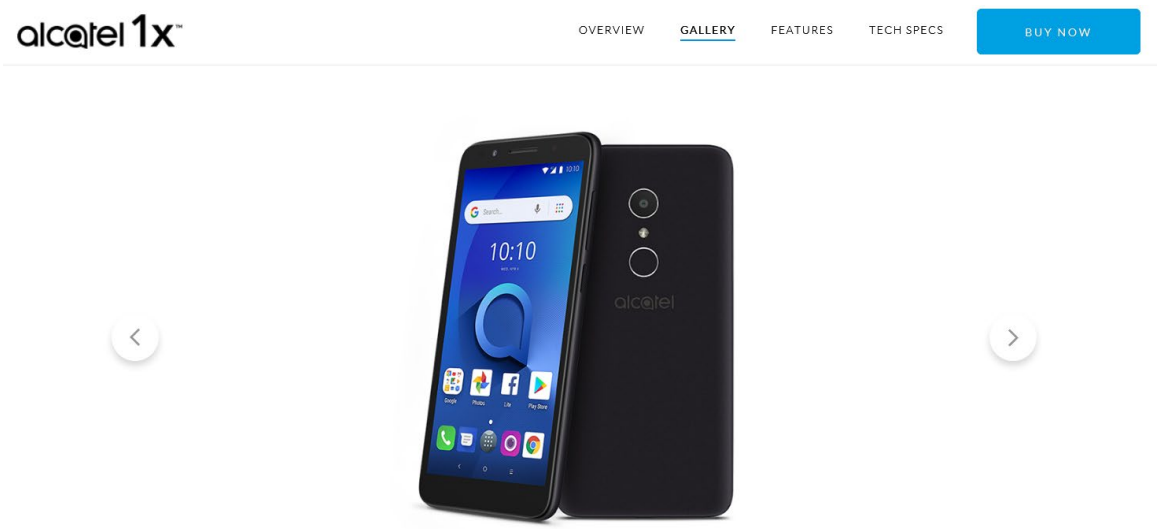
COUNT VI

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

85. 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."

86. 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.

87. Defendants 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, their Alcatel brand 1X or Blackberry brand DTEK families of products having predictive text and other advanced keyboard layout capabilities ("accused products"):



Source: https://us.alcatelmobile.com/alcatel1x/

OPERATING SYSTEM

Android™ Oreo™ (Go Edition)

Source: https://us.alcatelmobile.com/alcatel1x/

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/overview

OS	Operating system	Android OS

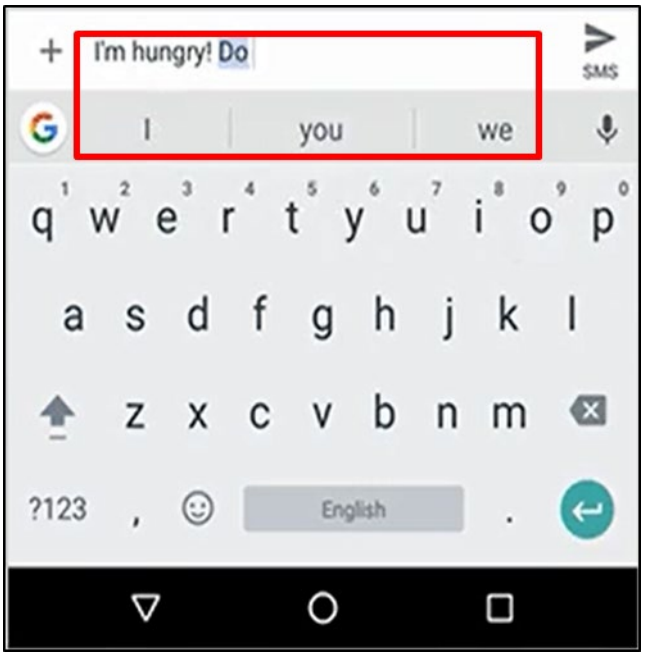
Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

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

89. Defendants have 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.

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



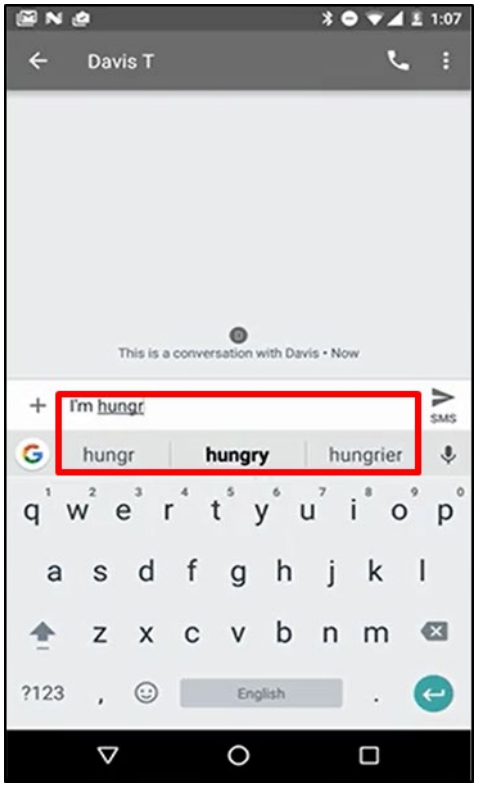
(Source: https://www.blog.google/products/search/express-yourself-GBoard-androids-newest-features/)

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

92. 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.

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

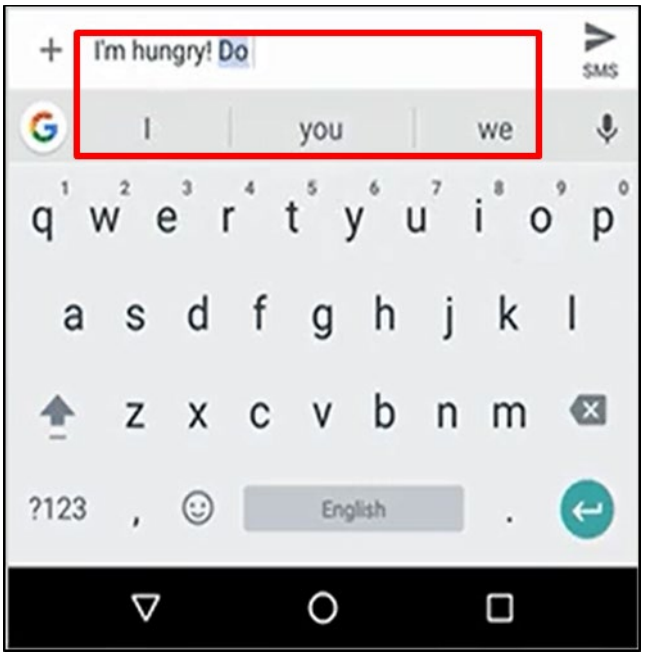
94. The methods practiced by the accused products include displaying a set of symbols on the display elements corresponding to the input device layout.



(Source: https://www.blog.google/products/search/express-yourself-GBoard-androids-newest-features/)

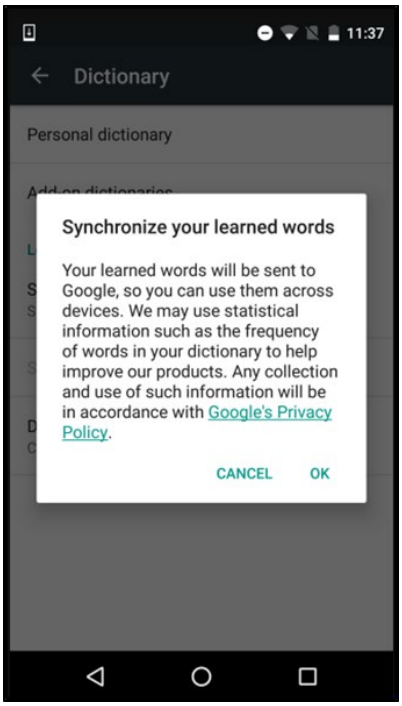
95. Defendants have infringed the '049 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale systems having an input device for a data processing system, the input device having a set of display elements capable of displaying symbols.

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



(Source: https://www.blog.google/products/search/express-yourself-GBoard-androids-newest-features/)

97. 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/)

98. Defendants have had knowledge of the '049 Patent at least as of the date when it was notified of the filing of this action.

99. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are 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.

100. 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.

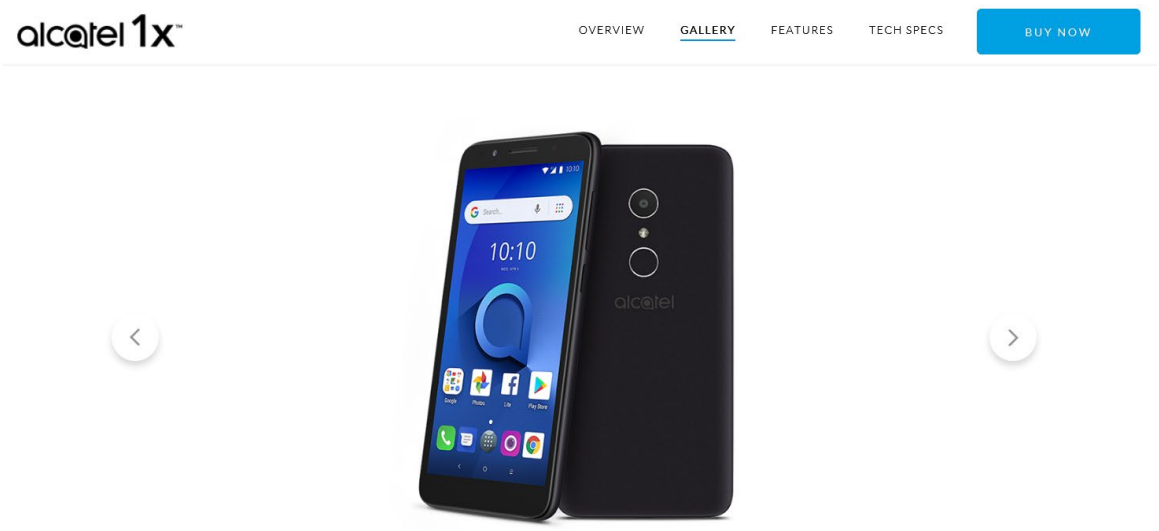
COUNT VII

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

101. 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."

102. 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.

103. Defendants 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, their Alcatel brand 1X or Blackberry brand DTEK families of products having predictive text and other advanced keyboard layout capabilities ("accused products"):



Source: https://us.alcatelmobile.com/alcatel1x/

OPERATING SYSTEM

Android™ Oreo™ (Go Edition)

Source: https://us.alcatelmobile.com/alcatel1x/

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/overview

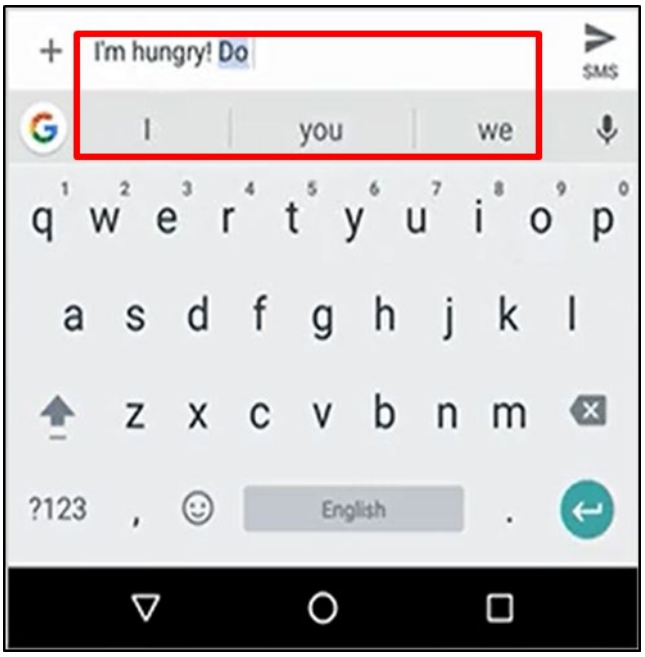
OS	Operating system	Android OS

Source: https://us.blackberry.com/smartphones/dtek50-60-by-blackberry/specifications

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

105. Defendants have 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.

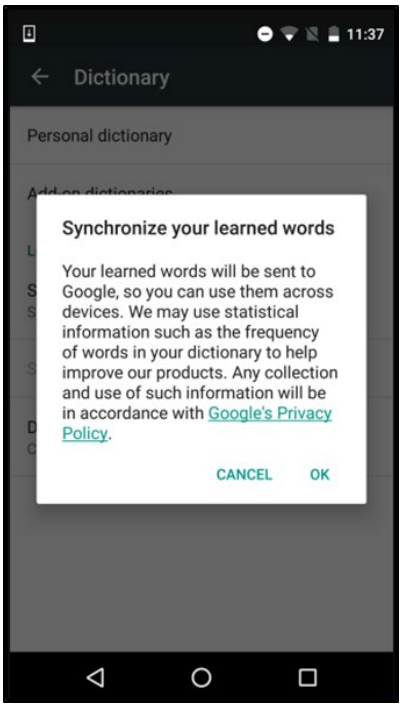
106. The methods performed by the accused products include selecting an input device layout.



(Source: https://www.blog.google/products/search/express-yourself-GBoard-androids-newest-features/)

107. 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

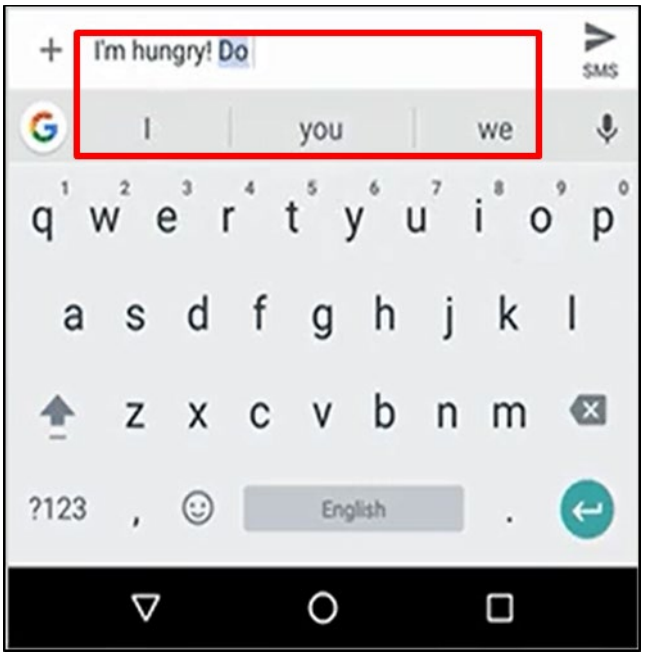
downloading the identified input device layout over the network from a server having a plurality of input device layouts based upon the determination, and displaying a set of symbols on the display elements corresponding to the input device layout.



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

108. Defendants have 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.

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

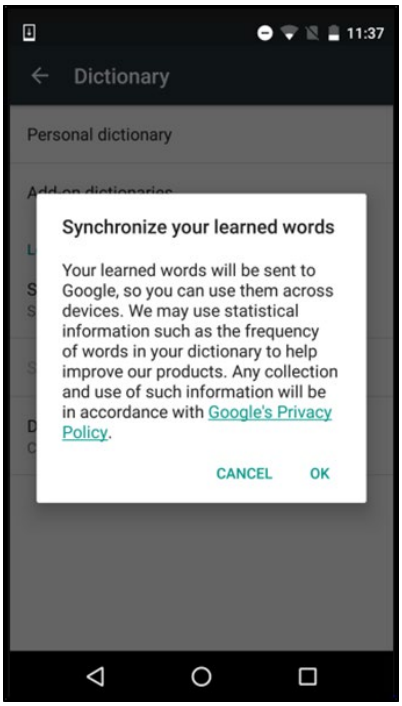


(Source: https://www.blog.google/products/search/express-yourself-GBoard-androids-newest-features/)

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

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

112. 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/)

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

114. Defendants have had knowledge of the '626 Patent at least as of the date when it was notified of the filing of this action.

115. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are 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.

116. 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

117. Defendants have 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. Defendants have induced the end-users, their 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. Defendants 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 Defendants 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. Defendants are 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. Defendants were and are aware that the normal and customary use of the accused products by Defendants’ 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. Defendants’ inducement is ongoing.

118. Defendants have also induced their affiliates, or third-party manufacturers, shippers, distributors, retailers, or other persons acting on their or their 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. Defendants 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 Defendants 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 their behalf, to import, sell, or offer to sell the accused products in an infringing manner. Defendants 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. Defendants performed such steps in order to profit from the eventual sale of the accused products in the United States. Defendants' inducement is ongoing.

119. Defendants have 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. Defendants have 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. Defendants’ contributory infringement is ongoing.

120. Furthermore, Defendants have a policy or practice of not reviewing the patents of others (including instructing their employees to not review the patents of others), and thus has been willfully blind of American Patents’ patent rights.

121. Defendants’ 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 Defendants.

122. Defendants’ 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.

123. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are 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 Defendants, 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 Defendants and/or all others acting in concert therewith;

b. A permanent injunction enjoining Defendants and their 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;

e. Judgment that Defendants account for and pay to American Patents all damages to and costs incurred by American Patents because of Defendants’ 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;

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

g. 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

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

Dated: October 26, 2018

Respectfully submitted,

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