IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

WSOU INVESTMENTS, LLC d/b/a BRAZOS LICENSING AND DEVELOPMENT,	§	CIVIL ACTION NO. 6:20-cv-211
Plaintiff,	§	**JURY TRIAL DEMANDED**
v.	§	
ZTE CORPORATION, ZTE (USA) INC., AND ZTE (TX), INC.	§	
Defendants.	§	

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff WSOU Investments, LLC d/b/a Brazos Licensing and Development ("Brazos" or "Plaintiff"), by and through its attorneys, files this Complaint for Patent Infringement against Defendants ZTE Corporation, ZTE (USA), Inc. and ZTE (TX), Inc. (collectively "ZTE" or "Defendants") and alleges:

NATURE OF THE ACTION

1. This is a civil action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. §§ 1, et seq., including §§ 271, 281, 284, and 285.

THE PARTIES

2. Brazos is a limited liability corporation organized and existing under the laws of Delaware, with its principal place of business at 605 Austin Ave, Ste 6, Waco, TX 76701.

3. On information and belief, Defendant Zhongxing Telecommunications Equipment (abbreviated as "ZTE") Corporation is a Chinese corporation that does business in Texas, directly or through intermediaries, with a principal place of business at ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen China.

4. On information and belief, Defendant ZTE (USA) Inc. is a New Jersey corporation that does business in Texas, directly or through intermediaries, with a principal place of business in business in Richardson, Texas.

5. On information and belief, Defendant ZTE (TX) Inc. is a Texas corporation that does business in Texas, directly or through intermediaries, with a principal place of business in business in Austin, Texas.

6. All of the Defendants operate under and identify with the trade name "ZTE." Each of the Defendants may be referred to individually as a "ZTE Defendant" and, collectively, Defendants may be referred to below as "ZTE" or as the "ZTE Defendants."

JURISDICTION AND VENUE

7. This is an action for patent infringement which arises under the Patent Laws of the United States, in particular, 35 U.S.C. §§271, 281, 284, and 285.

8. This Court has jurisdiction over the subject matter of this action under 28 U.S.C. §§ 1331 and 1338(a).

9. This Court has specific and general personal jurisdiction over each ZTE Defendant pursuant to due process and/or the Texas Long Arm Statute, because each ZTE Defendant has committed acts giving rise to this action within Texas and within this judicial district. The Court's exercise of jurisdiction over each ZTE Defendant would not offend traditional notions of fair play and substantial justice because ZTE has established minimum contacts with the forum. For example, on information and belief, ZTE Defendants have committed acts of infringement in this judicial district, by among other things, selling and offering for sale products that infringe the asserted patent, directly or through intermediaries, as alleged herein.

10. Venue in the Western District of Texas is proper pursuant to 28 U.S.C. §§1391 and/or 1400(b). The ZTE Defendants have committed acts of infringement and have places of businesses in this District and/or are foreign entities for purpose of §1391. As non-limiting examples, ZTE (TX) has maintained a place of business at 7000 N MO-PAC EXPRESSWAY 200 AUSTIN, TX 7873; and, ZTE (USA) has maintained a place of business at 6500 River Place Blvd., Austin, TX 78730. ZTE Corporation also describes a "research-and-development center in Austin, Texas."[1]

COUNT ONE - INFRINGEMENT OF U.S. PATENT NO. 8,451,839

11. Brazos re-alleges and incorporates by reference the preceding paragraphs of this Complaint.

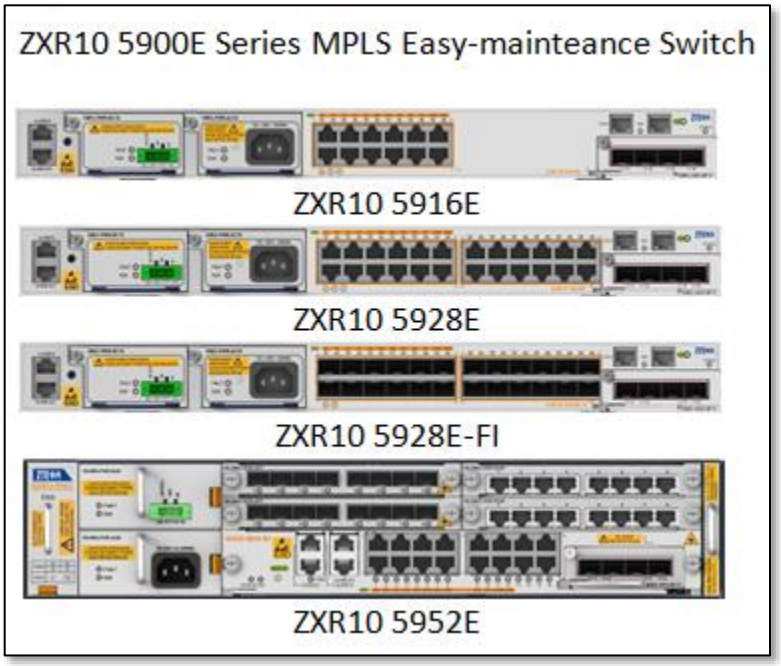
12. On May 28, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,451,839 ("the '839 Patent"), entitled "METHOD AND APPARATUS FOR MANAGING ROUTE INFORMATION AND FORWARDING DATA IN ACCESS DEVICES." A true and correct copy of the '839 Patent is attached as Exhibit A to this Complaint.

13. Brazos is the owner of all rights, title, and interest in and to the '839 Patent, including the right to assert all causes of action arising under the '839 Patent and the right to any remedies for the infringement of the '839 Patent.

14. ZTE makes, uses, sells, offers for sale, imports, and/or distributes, in the United States, networking products including routing switches (collectively, the "Accused Products").

15. The Accused Products include ZXR10 5900E series routing switches, including ZXR10 5916E, 5938E, 5928E-FI, and 5952E routing switches.

[1] https://res-www.zte.com.cn/mediares/magazine/publication/tech_en/pdf/201009.pdf



https://www.zte.com.cn/global/products/bearer/data_communication/ethernet_switch/5900E-EN.

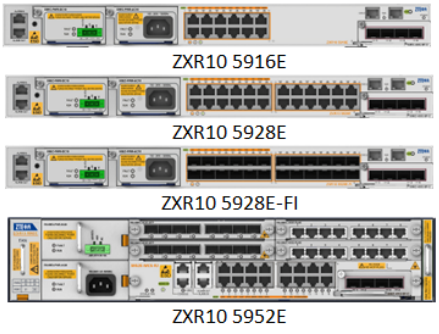
16. The Accused Products support Layer 2 features. ZTE Series switches can serve as an aggregation switch in various scenarios including Metro area networks and IP RAN. The Accused Products present ways to manage route information such as IP addresses, MAC addresses, etc.

ZXR10 5900E Series switch

Product Overview

ZXR10 5900E series MPLS easy-maintenance switches are box-like layer 3 MPLS routing switches that deliver superior integrated network services for space-constrained environments in service provider networks. It can serve as an aggregation switch in various scenarios including Metro area networks and IP RAN.
Powered by European standard hardware architecture, state-of-the-art software platform, the industry's first "Easy-maintenance" design philosophy, and industry-leading MPLS capability, ZXR10 5900E is a milestone switch presented by ZTE Corporation. With ZXR10 5900E, you can build highly reliable, secure and scalable networks, while ensuring terrific user experiences.

ZXR10 5900E Series MPLS Easy-mainteance Switch



ZXR10 5900E offers the following switch types:

https://www.zte.com.cn/global/products/bearer/data_communication/ethernet_switch/5900E-EN.

- The ZXR10 5250 Series switch supports MFF (MAC forced forwarding), L2 separation and L3 inter-communication can be realized to keep the network safe.

https://www.zte.com.cn/global/products/bearer/data_communication/ethernet_switch/5250-EN

2900E supports MFF (MAC forced forwarding), L2 separation and L3 inter-communication can be realized;

https://www.zte.com.cn/global/products/bearer/data_communication/ethernet_switch/2900E-EN

17. The Accused Products can be used to implement a Next Generation Network (NGN) network architecture.

ZTE NGN solutions selected by American telco Corisat

Corisat America Inc., a global telecommunications provider based in Miami, Florida, is to have its Softswitch-based NGN network provided by ZTE Corporation.

https://www.zte.com.cn/global/about/magazine/zte-technologies/2005/8/en_241/161535.html

> In one word, the NGN requires all-IP products such as routers and Ethernet Switches (ES) to achieve high efficiency and reliability, as well as advanced network technologies. The required technologies are QoS, Multiple Protocol Label Switching (MPLS), MPLS Virtual Private Network (VPN), MPLS-TE (Traffic Engineering) and IPv6 to ensure QoS, security, reliability and more.

https://www.zte.com.cn/global/about/magazine/zte-communications/2005/3/en_58/162351.html

18. The Accused Products implement a feature of MAC-Forced Forwarding (MFF), to isolate users at the access side. Accused ZTE switches create and maintain MFF user information tables (e.g., route information tables) by capturing Acknowledgement (ACK) packets returned by the Dynamic Host Configuration Protocol (DHCP). Further, the Accused Products can capture or receive the DHCP ACK packets (e.g., access response message) from the DHCP server in a VLAN to create and maintain the MFF user table.

Function and Parameters		5916E	5928E	5928E-FI	5952E
	Multicast	Administratively scoped multicast/IPTV, MVR, IGMP, IGMP Snooping, Filtering , Proxy and Fast Leave, PIM-SM, PIM-DM, MSDP			
	QoS	Marking, modification of Qos priority and mapping between 802.1p, IP DSCP. 8 hardware-based queues per port, SP,WRR,SP+WRR queue scheduling mechanisms, Policing/shaping based on port/flow, Congestion avoidance mechanisms including WRED and Tail-Drop			
	Security	CPU anti-attack, CPU overload protection, Broadcast/Multicast/unknown Unicast suppression, STP Root Guard, BPDU guard, uRPF, RIP/OSPF/BGP MD5 encryption checking, IP source Guard, DAI, Bidirectional ACL			
	Reliability	LACP, ZESS, ZESR/ZESR+, VRRPE, BFD			
	Enhanced Features	MFF, M-BUTTON, EEE, Zero-Configuration, VSC			

https://manualzz.com/doc/26168198/zxr10-switch-product-quick-reference-guide_international (page 40).

MFF Overview

...

MAC-Forced Forwarding (MFF) is a security function (defined in RFC 4562) used on access devices. MFF uses the ARP proxy mechanism to implement L2 separation and L3 communication for hosts in the same broadcast domain.

In a conventional Ethernet, VLANs are used to implement L2 separation and L3 communication for hosts. To separate a large number of L2 hosts, a lot of VLANs need to be used. To implement L3 communication for hosts, it is necessary to allocate an IP network segment to each VLAN, and configure an IP address for each VLAN interface. If too many VLANs are used, the IP address allocation efficiency is affected. MFF can solve this problem.

...

MFF can operate in the following modes:

- Automatic mode

  This mode is used when the IP addresses of users are dynamically allocated through DHCP. The user access device captures DHCP packets and parses information in ACK packets to retrieve IP addresses of users and the gateway, and then creates a correspondence entry between the IP address + MAC address of each user and the gateway IP address.

- Manual mode

  This mode is used when the IP addresses of users are statiscally specified. The user access device captures ARP packets to create a correspondence entry between the IP address + MAC address of each user and the gateway IP address.

...

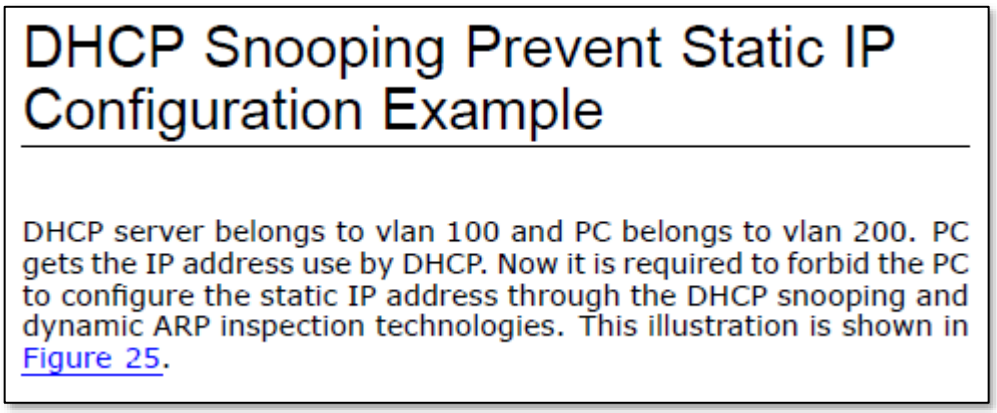
The device captures ARP requests from each user, uses the MAC address of the user gateway to construct ARP responses, and responds to the ARP requests through the ARP proxy mechanism. In this way, all traffic (including traffic in the same subnet) from users is compulsively sent to the gateway, and then the gateway forwards traffic between users in accordance with the specified rules, so that the gateway can monitor traffic between users to implement L2 separation and L3 communication in the same broadcast domain.

...

The access node searches the MFF user information table based on the source IP address and source MAC address in the ARP request from host A to retrieve the IP address of the access router (namely, the gateway of host A).

http://www.nova-minsk.com/ZTE/59E/SJ-20150114102049-009-ZXR10%205900E%20Series%20(V3.00.11)Configuration%20Guide%20(Security).pdf (pages 125-126).

19. DHCP response messages (e.g., the access response messages) can be received by the Accused Products from a DHCP server in a VLAN.



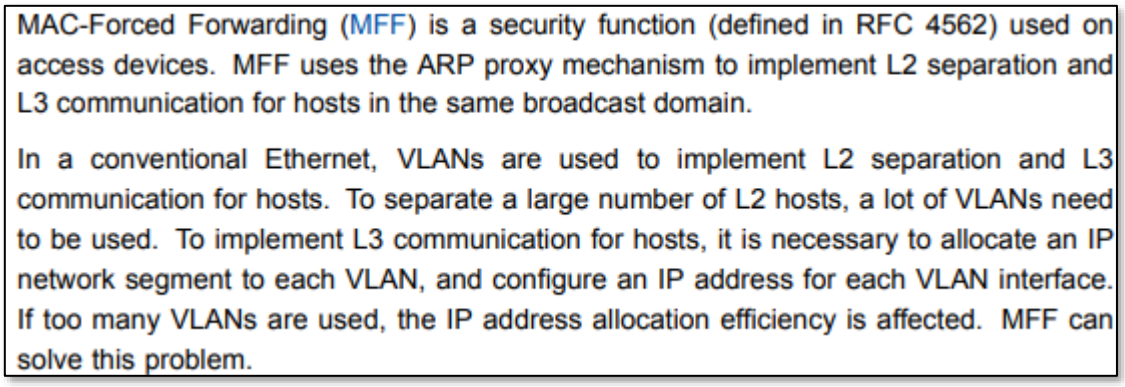
DHCP Snooping Prevent Static IP Configuration Example

DHCP server belongs to vlan 100 and PC belongs to vlan 200. PC gets the IP address use by DHCP. Now it is required to forbid the PC to configure the static IP address through the DHCP snooping and dynamic ARP inspection technologies. This illustration is shown in Figure 25.

https://www.manualslib.com/manual/788723/Zte-Zxr10-5900-Series.html?page=113 (Page 116).

20. The Accused Products can create and maintain an MFF user table by capturing DHCP ACK packets (e.g., access response) and obtaining field entries of a gateway corresponding to an IP address associated with a client (e.g., route-related information).

MFF Overview



MAC-Forced Forwarding (MFF) is a security function (defined in RFC 4562) used on access devices. MFF uses the ARP proxy mechanism to implement L2 separation and L3 communication for hosts in the same broadcast domain.

In a conventional Ethernet, VLANs are used to implement L2 separation and L3 communication for hosts. To separate a large number of L2 hosts, a lot of VLANs need to be used. To implement L3 communication for hosts, it is necessary to allocate an IP network segment to each VLAN, and configure an IP address for each VLAN interface. If too many VLANs are used, the IP address allocation efficiency is affected. MFF can solve this problem.

…

> The access node searches the MFF user information table based on the source IP address and source MAC address in the ARP request from host A to retrieve the IP address of the access router (namely, the gateway of host A).

> MFF can operate in the following modes:
> - Automatic mode
>
> This mode is used when the IP addresses of users are dynamically allocated through DHCP. The user access device captures DHCP packets and parses information in ACK packets to retrieve IP addresses of users and the gateway, and then creates a correspondence entry between the IP address + MAC address of each user and the gateway IP address.
> - Manual mode
>
> This mode is used when the IP addresses of users are statiscally specified. The user access device captures ARP packets to create a correspondence entry between the IP address + MAC address of each user and the gateway IP address.

…

http://www.nova-minsk.com/ZTE/59E/SJ-20150114102049-009-ZXR10%205900E%20Series%20(V3.00.11)Configuration%20Guide%20(Security).pdf (pages 125-126).

21. The lease time is the predefined time that is embedded in the DHCP messages. The lease time is the remaining time till which the route item, IP address associated with the DHCP messages, is updated. The lease time can be a long lease or a short lease.

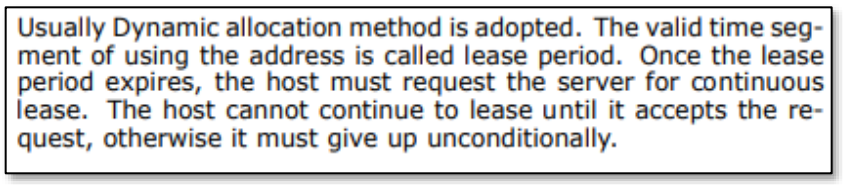
22. The Accused Products also can obtain a lease time from DHCP ACK packets configured at a DHCP server

> **DHCP Configuration**

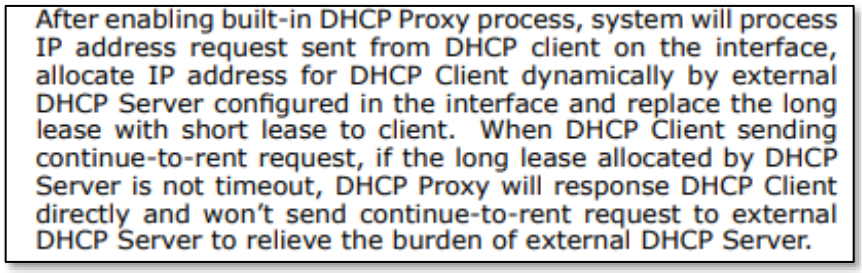
…

> Dynamic allocation—DHCP assigns an IP address to a client for a limited period of time (or until the client explicitly relinquishes the address).

…


Usually Dynamic allocation method is adopted. The valid time segment of using the address is called lease period. Once the lease period expires, the host must request the server for continuous lease. The host cannot continue to lease until it accepts the request, otherwise it must give up unconditionally.

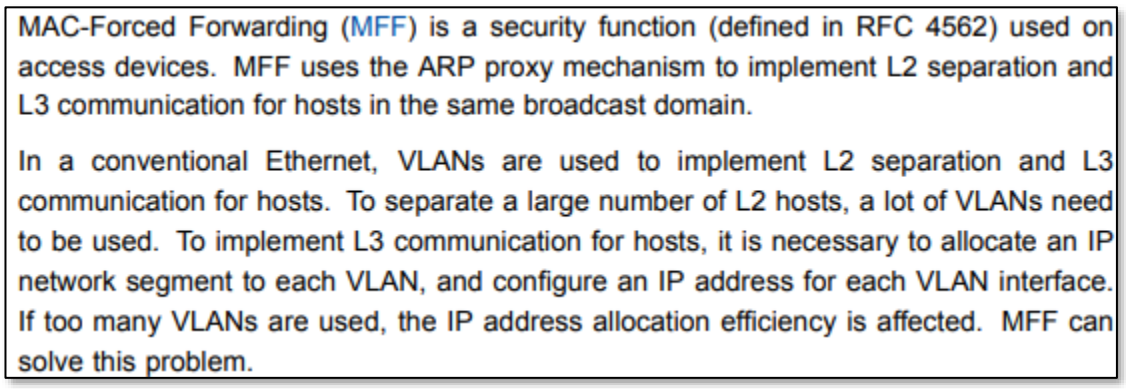
…


After enabling built-in DHCP Proxy process, system will process IP address request sent from DHCP client on the interface, allocate IP address for DHCP Client dynamically by external DHCP Server configured in the interface and replace the long lease with short lease to client. When DHCP Client sending continue-to-rent request, if the long lease allocated by DHCP Server is not timeout, DHCP Proxy will response DHCP Client directly and won't send continue-to-rent request to external DHCP Server to relieve the burden of external DHCP Server.

https://www.manualslib.com/manual/788723/Zte-Zxr10-5900-Series.html (Pages 97, 103).

23. The Accused Products maintain (e.g., update) an MFF user information tables (e.g., routing tables) by capturing DHCP ACK packets (e.g., access response) and obtaining field entries of a gateway corresponding to an IP address associated with a client (e.g., route-related information). A corresponding entry between an IP and a MAC address of each user and a gateway IP address can be changed when a new DHCP request message is sent upon an expiration of lease time. Accordingly, an MFF user information table (e.g., route table item) can be updated.


MFF Overview


MAC-Forced Forwarding (MFF) is a security function (defined in RFC 4562) used on access devices. MFF uses the ARP proxy mechanism to implement L2 separation and L3 communication for hosts in the same broadcast domain.

In a conventional Ethernet, VLANs are used to implement L2 separation and L3 communication for hosts. To separate a large number of L2 hosts, a lot of VLANs need to be used. To implement L3 communication for hosts, it is necessary to allocate an IP network segment to each VLAN, and configure an IP address for each VLAN interface. If too many VLANs are used, the IP address allocation efficiency is affected. MFF can solve this problem.

…

…

MFF can operate in the following modes:

- Automatic mode

  This mode is used when the IP addresses of users are dynamically allocated through DHCP. The user access device captures DHCP packets and parses information in ACK packets to retrieve IP addresses of users and the gateway, and then creates a correspondence entry between the IP address + MAC address of each user and the gateway IP address.

- Manual mode

  This mode is used when the IP addresses of users are statiscally specified. The user access device captures ARP packets to create a correspondence entry between the IP address + MAC address of each user and the gateway IP address.

…

The device captures ARP requests from each user, uses the MAC address of the user gateway to construct ARP responses, and responds to the ARP requests through the ARP proxy mechanism. In this way, all traffic (including traffic in the same subnet) from users is compulsively sent to the gateway, and then the gateway forwards traffic between users in accordance with the specified rules, so that the gateway can monitor traffic between users to implement L2 separation and L3 communication in the same broadcast domain.

…

Figure 12-1 shows a network on which the MFF function is used. Host A sends an ARP request to host B. After receiving the ARP request from host A, the access node on which the MFF function is enabled operates in the following procedure:

1. The access node searches the MFF user information table based on the source IP address and source MAC address in the ARP request from host A to retrieve the IP address of the access router (namely, the gateway of host A).
2. The access node searches the ARP cache table based on the IP address of the gateway to retrieve the MAC address of the gateway.
3. The access node uses the MAC address of the gateway and the IP address of host B to construct an ARP response, and responds to the request from host A, so that the MAC address of host B learned on host A is the MAC address of the gateway.

http://www.nova-minsk.com/ZTE/59E/SJ-20150114102049-009-ZXR10%205900E%20Series%20(V3.00.11)Configuration%20Guide%20(Security).pdf (pages 125-126).

24. In view of preceding paragraphs, each and every element of at least claim 1 of the ’839 Patent is found in the Accused Products.

25. ZTE has and continues to directly infringe at least one claim of the ’839 Patent, literally or under the doctrine of equivalents, by making, using, selling, offering for sale, importing, and/or distributing the Accused Products in the United States, including within this judicial district, without the authority of Brazos.

26. ZTE has received notice and actual or constructive knowledge of the ’839 Patent since at least the date of service of this Complaint.

27. Since at least the date of service of this Complaint, through its actions, ZTE has actively induced product makers, distributors, retailers, and/or end users of the Accused Products to infringe the ’839 Patent throughout the United States, including within this judicial district, by, among other things, advertising and promoting the use of the Accused Products in various websites, including providing and disseminating product descriptions, operating manuals, and other instructions on how to implement and configure the Accused Products. Examples of such advertising, promoting, and/or instructing include the documents at:

- https://www.zte.com.cn/global/products/bearer/data_communication/ethernet_switch/2900E-EN
- https://manualzz.com/doc/26168198/zxr10-switch-product-quick-reference-guide_international
- http://www.nova-minsk.com/ZTE/59E/SJ-20150114102049-009-ZXR10%205900E%20Series%20(V3.00.11)Configuration%20Guide%20(Security).pdf
- https://www.manualslib.com/manual/788723/Zte-Zxr10-5900-Series.html
- https://www.zte.com.cn/global/about/magazine/zte-technologies/2005/8/en_241/161535.html
- https://www.zte.com.cn/global/about/magazine/zte-communications/2005/3/en_58/162351.html
- https://www.zte.com.cn/global/products/bearer/data_communication/ethernet_switch/5250-EN
- https://www.zte.com.cn/global/products/bearer/data_communication/ethernet_switch/2900E-EN

- https://www.manualslib.com/download/788723/Zte-Zxr10-5900-Series.html

28. Since at least the date of service of this Complaint, through its actions, ZTE has contributed to the infringement of the '839 Patent by having others sell, offer for sale, or use the Accused Products throughout the United States, including within this judicial district, with knowledge that the Accused Products infringe the '839 Patent. The Accused Products are especially made or adapted for infringing the '839 Patent and have no substantial non-infringing use. For example, in view of the preceding paragraphs, the Accused Products contain functionality which is material to at least one claim of the '839 Patent.

JURY DEMAND

Brazos hereby demands a jury on all issues so triable.

REQUEST FOR RELIEF

WHEREFORE, Brazos respectfully requests that the Court:

(A) Enter judgment that ZTE infringes one or more claims of the '839 Patent literally and/or under the doctrine of equivalents;

(B) Enter judgment that ZTE has induced infringement and continues to induce infringement of one or more claims of the '839 Patent;

(C) Enter judgment that ZTE has contributed to and continues to contribute to the infringement of one or more claims of the '839 Patent;

(D) Award Brazos damages, to be paid by ZTE in an amount adequate to compensate Brazos for such damages, together with pre-judgment and post-judgment interest for the infringement by ZTE of the '839 Patent through the date such judgment is entered in accordance with 35 U.S.C. §284, and increase such award by up to three times the amount found or assessed in accordance with 35 U.S.C. §284;

(E) Declare this case exceptional pursuant to 35 U.S.C. §285; and

(F) Award Brazos its costs, disbursements, attorneys' fees, and such further and additional relief as is deemed appropriate by this Court.

Dated: March 23, 2020

Respectfully submitted,

/s/ James L. Etheridge

James L. Etheridge
Texas State Bar No. 24059147
Ryan S. Loveless
Texas State Bar No. 24036997
Travis L. Richins
Texas State Bar No. 24061296
ETHERIDGE LAW GROUP, PLLC
2600 E. Southlake Blvd., Suite 120 / 324
Southlake, Texas 76092
Telephone: (817) 470-7249
Facsimile: (817) 887-5950
Jim@EtheridgeLaw.com
Ryan@EtheridgeLaw.com
Travis@EtheridgeLaw.com

COUNSEL FOR PLAINTIFF