
 Courtney Matkovich,
 v.
 Verizon Pennsylvania, LLC

Docket No. :
 C-2020-3022369

Initial Telephonic

Pages 1 - 141

Judge's Chambers
 Piatt Place
 301 5th Avenue
 Pittsburgh, PA

Tuesday, December 14, 2021
 Commencing at 10:04 a.m.

INDEX TO EXHIBITS

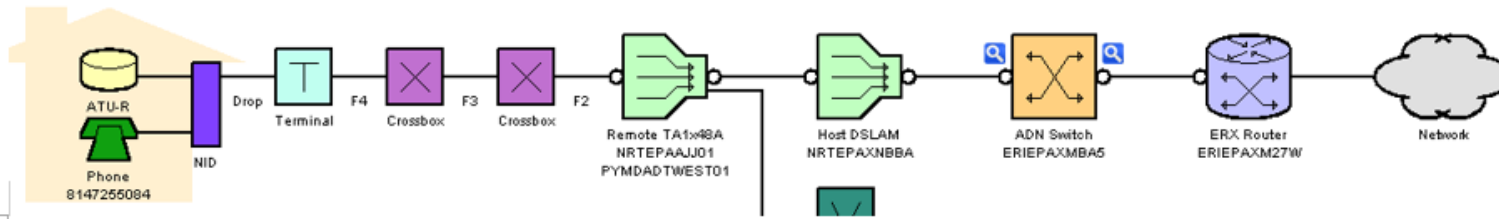
Docket No. C-2020-3022369

Hearing Date: December 14, 2021

<u>NUMBER</u>	<u>FOR IDENTIFICATION</u>	<u>IN EVIDENCE</u>
Respondent's Exhibit 1	62	135*
End-to-End Network Configuration		
Respondent's Exhibit 2	94	135
Bandwidth Used by Typical Homes		

* Admitted over objection.

Verizon End to End Network Configuration – TN: 814-725-5084



Downstream Speed [kb/s]:

Upstream Speed [kb/s]:

Model:

Switch ID:

Logical Port:

Physical Port:

Model:

Access VPI-VCI:

3360KB	3360KB
768KB	768KB
ATM	ATM
ERIEPAXMBA5	ERIEPAXMBA5
53	58
13-3	7-2
CBX500	CBX500
13-66	

13.3 Port faces Adtran > customer

7.2 Port faces ERX router > Internet

Output Buffer discards = 0 both ports

Output Buffer discards show discarded cells due to congestion (buffers full)

ERIE MAIN CBX500 port 13-3 showing 0 Discarded Cells operating at 1.7% and 20.8% utilization on 12/3/21 at 12:26pm showing no congestion on port 13.3

NavisCore - Physical Port Summary Statistics

Switch Name:	ERIEPAXMBA5	Reset Time:	
IP Address:	143.63.254.21	Current Time:	Fri Dec 3 12:26:00
PPort ID:	13.3	Poll Interval(sec):	5

Cumulative Statistics:

	Received	Transmitted
Number of Cells	888127408	940644465
Cell Errors	47	
Output Buffer Discarded Cells		0

Throughput:

	Received	Transmitted
Cells per second	5962.1	73356.0

	Received	Transmitted
Utilization (%)	1.7	20.8

Reset Close

Monday 12/6/2021 2:55am Snapshot – Customer (B Port) running at 100% utilization exceeding 3.36MB usage downstream

Circuit Name: 116/0C03C/ERIEPAXMBA5/ERIEPAXM27W-53.ACGN.476781 Reset Time: Mon Dec 6 02:51:17

Logical Port(A): NRTEPAXNBBA-R0138690 Current Time: Mon Dec 6 02:55:17

Logical Port(B): 254,021-07-02-01 Poll Interval(sec): 5

Switch Name: ERIEPAXMBA5 Reset Time: Mon Dec 6 02:51:14

IP Address: 143.63.254.21 Current Time: Mon Dec 6 02:55:18

Port ID: 13.3 Poll Interval(sec): 5

Traffic Descriptor A
PCR (CLP=0+1): 2038

QoS Class A: UBR

Traffic Descriptor B
PCR (CLP=0+1): 7925

QoS Class B: UBR

Cumulative Statistics:

	Received(A)	Transmitted(A)	Received(B)	Transmitted(B)
Passed CLP=0 Cells	60366	1912146	1912140	60366
Passed CLP=1 Cells	0	0	0	0
Discarded CLP=0 Cells	0	0	0	0
Discarded CLP=1 Cells	0	0	0	0
Frames Discarded				
Tagged Cells	0	0	0	0
ATM FCP Discarded CLP=0 Cells	0	0	0	0
ATM FCP Discarded CLP=1 Cells	0	0	0	0
OAM CLP=0 Cells	0	0	0	0
OAM CLP=1 Cells	0	0	0	0

Throughput:

	Received(A)	Transmitted(A)	Received(B)	Transmitted(B)
Bits per second	105545,7	3361562,9	3361638,6	105545,7
Cells per second	248,9	7928,2	7928,4	248,9

Circuit Utilization 'A' (%): 12,2 100,0 Circuit Utilization 'B' (%): 100,0 12,2

Cumulative Statistics:

	Received	Transmitted
Number of Cells	1283372	11247946
Cell Errors	0	
Output Buffer Discarded Cells		0

Throughput:

	Received	Transmitted
Cells per second	5083,2	45440,3

Utilization (%): 1,4 12,9

NavisCore - Physical Port Summary Statistics

Switch Name: ERIEPAXMBA5 Reset Time: Mon Dec 6 02:51:16

IP Address: 143.63.254.21 Current Time: Mon Dec 6 02:55:18

PPort ID: 7.2 Poll Interval(sec): 5

Cumulative Statistics:

	Received	Transmitted
Number of Cells	11441801	1341037
Cell Errors	0	
Output Buffer Discarded Cells		0

Throughput:

	Received	Transmitted
Cells per second	44719,4	6076,2

Utilization (%): 12,7 1,7

Live circuit traffic monitoring while VZ Technician watched a random YouTube video w/ constant streaming – customer downstream 2.8MB – Upstream 650KB

2.8 Down Stream YouTube relax video no buffering

NavisCore - Circuit Summary Statistics

Circuit Name: 116/0C03C/ER1EPAXMB45/ER1EPAXM27W-53,ACGN.476781 Reset Time: Fri Dec 3 10:28:40
 Logical Port(A): NRTEPAXNBBA-R0138690 Current Time: Fri Dec 3 10:41:19
 Logical Port(B): 254.021-07-02-01 Poll Interval(sec): 5

Traffic Descriptor A: PCR (CLP=0+1): 2038 Traffic Descriptor B: PCR (CLP=0+1): 7925

QoS Class A: UBR QoS Class B: UBR

Cumulative Statistics:

	Received(A)	Transmitted(A)	Received(B)	Transmitted(B)
Passed CLP=0 Cells	189246	1346281	1346283	189302
Passed CLP=1 Cells	0	0	0	0
Discarded CLP=0 Cells	0	0	0	0
Discarded CLP=1 Cells	0	0	0	0
Frames Discarded				
Tagged Cells	0	0	0	0
ATM FCP Discarded CLP=0 Cells	0	0	0	0
ATM FCP Discarded CLP=1 Cells	0	0	0	0
OAM CLP=0 Cells	0	0	0	0
OAM CLP=1 Cells	0	0	0	0

Throughput:

	Received(A)	Transmitted(A)	Received(B)	Transmitted(B)
Bits per second	62464.3	2858290.0	2809530.0	65947.1
Cells per second	147.3	6741.2	6626.2	155.5

Circuit Utilization 'A' (%): 7.2 85.1 Circuit Utilization 'B' (%): 83.6 7.6

PPort Stats LPort Stats Save Restore **Reset** Close

Verizon Network monitoring during FAST.COM speed test. Verizon traffic shows >3.09MB downstream minus Algorithms applied by FAST.COM system

NavisCore - Circuit Summary Statistics

Circuit Name: 116/DC03C/ERIEPAXMBA5/ERIEPAXM27M-53_ACGN.476781 Reset Time: Fri Dec 3 10:28:40
 Logical Port(A): NRTEPAXNBBA-R0138690 Current Time: Fri Dec 3 10:48:02
 Logical Port(B): 254.021-07-02-01 Poll Interval(sec): 5

Traffic Descriptor A: PCR (CLP=0+1): 2038 Traffic Descriptor B: PCR (CLP=0+1): 7925

QoS Class A: UBR QoS Class B: UBR

Cumulative Statistics:

	Received(A)	Transmitted(A)		Received(B)	Transmitted(B)
Passed CLP=0 Cells	298750	2798915	Passed CLP=0 Cells	2798921	298933
Passed CLP=1 Cells	0	0	Passed CLP=1 Cells	0	0
Discarded CLP=0 Cells	0	0	Discarded CLP=0 Cells	0	0
Discarded CLP=1 Cells	0	0	Discarded CLP=1 Cells	0	0
Frames Discarded			Frames Discarded		
Tagged Cells	0	0	Tagged Cells	0	0
ATM FCP Discarded CLP=0 Cells		0	ATM FCP Discarded CLP=0 Cells		0
ATM FCP Discarded CLP=1 Cells		0	ATM FCP Discarded CLP=1 Cells		0
OAM CLP=0 Cells		0	OAM CLP=0 Cells		0
OAM CLP=1 Cells		0	OAM CLP=1 Cells		0

Throughput:

	Received(A)	Transmitted(A)		Received(B)	Transmitted(B)
Bits per second	864835.3	30802.4	Bits per second	30927.1	865895.3
Cells per second	2039.7	72.6	Cells per second	72.9	2042.2

Circuit Utilization 'A' (%): 100.1 0.9 Circuit Utilization 'B' (%): 0.9 100.2

PPort Stats LPort Stats Save Restore **Reset** Close

Bandwidth used by typical home internet activities
<https://www.allconnect.com/blog/consumers-guide-to-internet-speed> ¹

How much bandwidth do you need?

Your internet speed needs really depend on your usage. Keep in mind that these are the speeds required for each device in your home. If you have multiple devices online at a time, you will need a faster plan.

Streaming

To stream videos, you'll need at least 3 Mbps. It takes at least 25 Mbps for 4K streaming on your computer or Ultra HD-enabled devices. Some streaming services suggest faster speeds:

- **Fubo TV** – at least 40 Mbps
- **Netflix** – at least 3 Mbps for standard definition; 5 Mbps for HD; 25 Mbps for HDR or 4K
- **Hulu** – at least 3 Mbps for on-demand; 8 Mbps for Live TV
- **DIRECTV NOW** – at least 2.5 Mbps; 2.5–7.5 Mbps for HD on mobile devices; 12 Mbps for streaming via web browser on a computer
- **Amazon Prime Video** – 900 Kbps for SD; 3.5 Mbps for HD

Watching video	Minimum download speed (Mbps)
Streaming Standard Definition (SD) video	3 – 4
Streaming High Definition (HD) video	5 – 8
Streaming Ultra HD 4K video	25

Data source: [FCC](#)

¹ “About Allconnect: Allconnect is a free resource that simplifies how you shop for internet and TV services. Our purpose at Allconnect is to provide you with the most simple and accurate way to compare and purchase the best internet service plan for your needs.” <https://www.allconnect.com/about-us>

Gaming

At a minimum, you need [4–8 Mbps for online gaming](#). For consistently efficient gaming, 10–25 Mbps tend to be best.

For gamers, it's also important to pay attention to ping time, because you're doing a significant amount of both uploading and downloading. For ping time, aim for 20 milliseconds or less, but you can get by with 20–100 milliseconds.

Gaming	Minimum download speed (Mbps)
Game console connecting to the internet	3
Online multiplayer	4

Data source: [FCC](#)

To make your internet faster at home, [boost your Wi-Fi signal](#). Resetting or moving your router can boost and stabilize your signal. You could also add a Wi-Fi repeater or extender to improve internet signals for gaming devices further away from your router.

Working from home

There are no one-size-fits-all answers when it comes to working from home; it really boils down to what kind of uploading and downloading you need to do in your job.

If you have multiple people working and learning remotely, you will want [a plan of at least 100 Mbps](#). If you frequently download and upload large files, you'll want internet speeds of at least 50 Mbps. For simpler computer programs (word processing, for example), you can get by with just 3–4 Mbps. For lots of video conferencing, you'll want to sit somewhere in the middle with at least 10 Mbps.

Video conferencing	Minimum download speed (Mbps)
Standard personal video call (e.g. Skype or Zoom)	1
HD personal video call (e.g. Skype or Zoom)	1.5
HD video teleconferencing	6

Data source: [FCC](#)