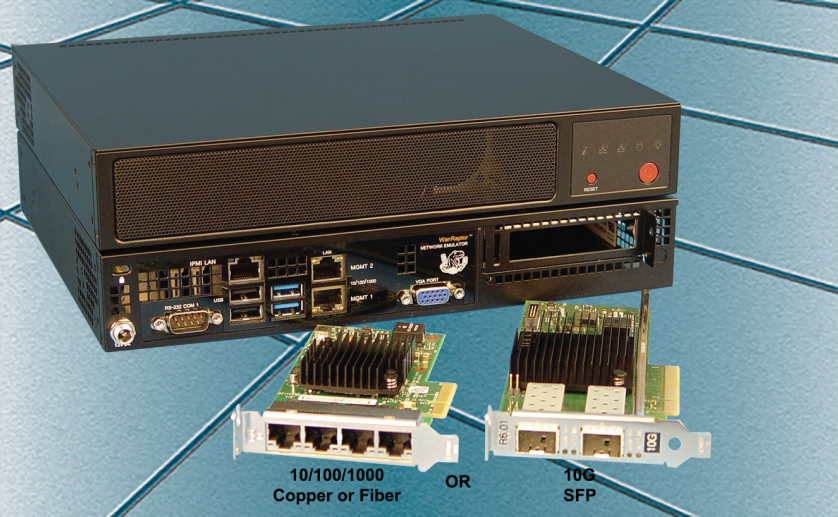


PDS-1/10G, Portable Delay Simulator

Now Supports
10/100/1000 or 10GbE

★ New Optional Network Traffic
Generator, PKT-GEN



FEATURES / BENEFITS

- ✓ Ideal for Software Developers, Trade Shows, Customer Demonstrations, Lab Bench Testing
- ✓ Emulation of Network Delays and Impairments
- ✓ Validate and Optimize your Network before Deployment to avoid Costly Application issues
- ✓ Line Rate Performance in Bridge or Route Modes
- ✓ Interfaces Available- 10/100/1000 or 10G
- ✓ Easy to use - GUI interface
- ✓ Bandwidth - 300bps to 10G in 1bps increments
- ✓ Delay - 0 ms to 10 sec. in 1ms or Decimal increments
- ✓ Supports Packet Loss, Re-Ordering, Packet Duplication
- ✓ Allows decimal entry and changes-on-the-fly
- ✓ Supports Bandwidth Restriction
- ✓ Real time Traffic Graph and Statistics
- ✓ Built-in Scheduler
- ✓ Supports 90-240VAC with UL/ CSA/TUV

DESCRIPTION

The PDS-1/10G Portable Delay Simulator allows network impairments for bandwidth restriction, latency, jitter, loss, re-ordering and duplication at link rates up to 10GbE. The PDS-1/10G allows changes-on-the-fly and has a real-time statistic screen with a packet counter reset. The unit supports 1G or 10G network emulation for one low cost.

The versatile PDS-1/10G is easily portable in a laptop case, it allows desk or bench top testing, wall mount or 1U Rackmount installation with a unique compact enclosure design. The unit is configured via a Graphical User Interface(GUI) and has no cumbersome software to install. The unit is backed with a strong 3-year warranty including maintenance software upgrades. The PDS-1/10G is a must have test tool for product development / demonstrations, network validation, VoIP, benchmark testing, video / IPTV simulation and website performance.

The PDS-1/10G is capable of any port LAN to LAN emulation or create up to ten VLAN emulations within a single LAN, each with its own impairments.

The PDS-1/10G can act as a bridge or a router in the users test bed or network. The user configures the unit via the GUI interface using a standard web browser. The GUI is fast and simple to use. All commands and settings are displayed prominently. Simply set the link rate, delay and any other impairments as needed. The user is presented with the results in real time and in a graph.

By using the PDS-1/10G in place of or in series with a real data link (WAN) a wide variety of error conditions can be introduced under controlled and testable conditions. The unit is an excellent choice for validating and evaluating new products and technologies.

The PDS-1/10G is housed in a sturdy metal enclosure which can be rack mounted. It is powered by an external 90-240V 50/60Hz power supply with 12VDC output. The unit has a three year warranty.

SPECIFICATIONS

Application

An embedded box appliance that will mimic the behavior of a WAN/LAN network, inserted between LAN segments supporting Bridge or Routing functions with network impairments such as bandwidth, delay, loss & re-ordering

Configuration Management Ports – GUI Access

Two Independent fixed 10/100/1000 Ethernet Ports

Bridge or Routing Support

All emulations support Bridge or Subnet Routing

Emulation Interfaces

10/100/1000 Copper or Fiber
10G with Optional SFP+ Inserts

Emulation Bandwidth Link Rates

100bps - 10GbE bi-directional or split speeds, Kbps, Mbps or Gbps

Emulated Latency Settings

Constant: 0 to 10 Seconds, Decimal Format Supported
Also Supports Uniform, Exponential & Inter-Packet

Emulation Impairments

Packet Loss: Percent or BER, Burst, Periodic, Gilbert-Elliot
Jitter: By use of different delay options,
Packet Re-Ordering and Random Packet Duplication
Bandwidth Restriction

VLAN Emulation Support

Create up to ten C-VLAN emulations within a single LAN, each with its own impairments

Link Throughput

Line Rate for 10/100/1000
Line rate for 10G, frames to 512 bytes
10G frames for 64/128 at 6.5G & 8.5G ** Under Full Load

Emulation Statistics

Each link is capable of real-time statistics via GUI

Password Protection

Implemented via the user LAN Management Port

Power Source

AC Mains: 90-240VAC @ 10%, 50/60Hz, Auto Range

Environmental

Operating Temperature....32° to 104° F (0° to 40° C)
Relative Humidity.....5 to 85% Non-Condensing
Altitude.....0 to 10,000 feet

Dimensions: H x W x D

1.70(43mm) x 10.00(254mm) x 8.90(226mm)

Weight

6 Pounds, 2.721Kg

Warranty

Three Years hardware, includes software support and software feature upgrades/improvements

Software Upgrades

Administered via the LAN User Management Ports

Web Browser Security & Compatibility

Supports Google Chrome and FireFox

Regulatory Approvals

UL, CSA, CE, CCC, FCC and RoHS

ORDERING INFORMATION

Part Number: 234000

Model: PDS-1/10

Description: PDS-1/10G Portable Delay Simulator, Base Unit

Part Number: 226000

Model: 4-Port 10/100/1000 Copper NIC Card

Part Number: 226009

Model: 2-Port 10/100/1000 with SFP+ NIC Card

Part Number: 226007

Model: 2-Port 10G with SFP+ NIC Card

Part Number: 226004

Model: SFP+ Optical Insert, SR, 10GbE Short Range 850 Multimode Fiber, LC Connector

Part Number: 234006

Model: Kit, 1U Rackmount W/Power Supply Shelf

INCLUDED WITH EACH UNIT:

- 1) Operations Manual
- 2) U.S.A. Grounded Power Cord, Part # 713015
- 3) 12V Power Supply

OPTIONAL POWER CORDS

- A) United Kingdom, Part # 713016
- B) Continental Europe, Part # 713017
- C) Other: Specify Country on Purchase Order

Other East Coast Datacom Products

RDS-PLUS, Serial Network Latency Simulator (Supports all serial interfaces, T1, E1, DS3 ect..)

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



EAST COAST DATACOM DESIGNS AND MANUFACTURES DATA COMMUNICATION EQUIPMENT FOR YOUR NETWORK REQUIREMENTS.

EAST COAST DATACOM, INC.

245 Gus Hipp Boulevard, STE 3 • Rockledge, FL 32955-4812 U.S.A.

TEL: (321) 637-9922

WEB SITE: www.ecdata.com

FAX: (321) 637-9980

Overview of the WanRaptor™ Network Emulator User Interface

WanRaptor NETWORK EMULATOR

Box ID: TestLab
Serial: 05190050
2019/11/20-13:41

Interfaces Status Leds: ● Up ● Down ● Emulating

MGMT1 1Gbps MGMT2 1Gbps ENS7F3 1Gbps ENS7F2 1Gbps ENS7F1 1Gbps ENS7F0 1Gbps

Emulations Logs System Performance System Settings Support admin

Profile Settings Bridge/Route Default Rules

Emulation Screen

Reset Save

ens7f1 -> ens7f0

Delay Settings

Delay Type: Constant

Delay Value: 25.7 ms

Range: 0-12000ms

Loss Settings

Loss Type: Packet loss rate

Packet Loss Rate: 0.001 %

Range: 0-100%

Bandwidth Settings

Bandwidth: 1 Gbps

Range: 0Kbps-1Gbps

Note: use Kbps when setting Bandwidth at rates below 10 Mbps

Packet Reordering Settings

ens7f0 -> ens7f1

Set different configuration: ☒

Delay Settings

Delay Type: Constant

Delay Value: 35.2 ms

Range: 0-12000ms

Loss Settings

Loss Type: Packet loss rate

Packet Loss Rate: 0 %

Range: 0-100%

Bandwidth Settings

Bandwidth: 1 Gbps

Range: 0Kbps-1Gbps

Note: use Kbps when setting Bandwidth at rates below 10 Mbps

Packet Reordering Settings

Allows Decimal Entry

**** Each VLAN has an extra 10ms Delay added for demonstration ****

WanRaptor NETWORK EMULATOR

Box ID: TestLab
Serial: 05190050
2019/11/20-13:47

Interfaces Status Leds: ● Up ● Down ● Emulating

MGMT1 1Gbps MGMT2 1Gbps ENS7F3 1Gbps ENS7F2 1Gbps ENS7F1 1Gbps ENS7F0 1Gbps

Emulations Logs System Performance System Settings Support admin

ens7f3->ens7f2 Profile: 1G_Bridge 7F3-7F2 Mode: bridge Bandwidth: 1 Gbps Loss: 0% [plr] Reorder Delay: 0ms Reorder Prob: 0% Delay: const Value: 25.3ms

Reset Counters

Role	Frames	Bytes	Dropped Frames	Dropped Bytes	Reordered Frames	Reordered Bytes
Receiver	3856375	5853974402	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Transmitter	3854731	5851477296	0 (0%)	0 (0%)	0 (0%)	0 (0%)

30 seconds

Real Time Stat / Log Screen

Bit Rate: 770.913 Mbps
Frame Rate: 63.48 Kpps
Losses[bytes]: 0
Losses[packets]: 0

ens7f2->ens7f3 Profile: 1G_Bridge 7F3-7F2 Mode: bridge Bandwidth: 1 Gbps Loss: 0% [plr] Reorder Delay: 0ms Reorder Prob: 0% Delay: const Value: 25.3ms

Reset Counters

Role	Frames	Bytes	Dropped Frames	Dropped Bytes	Reordered Frames	Reordered Bytes
Receiver	3856323	5853893952	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Transmitter	3854679	5851398360	0 (0%)	0 (0%)	0 (0%)	0 (0%)

30 seconds

Bit Rate: 770.816 Mbps
Frame Rate: 63.473 Kpps
Losses[bytes]: 0
Losses[packets]: 0

EAST COAST DATACOM, INC.

245 Gus Hipp Boulevard, STE 3 • Rockledge, FL 32955-4812 U.S.A.

TEL: (321) 637-9922

WEB SITE: www.ecdata.com

FAX: (321) 637-9980


WanRaptor™
 NETWORK EMULATOR

MGMT1	MGMT2	ENP450F0	ENP450F1	ENS3F0	ENS3F1	ENS3F2	ENS3F3	ENS7F0	ENS7F1
●	●	●	●	●	●	●	●	●	●
1Gbps	1Gbps	10Gbps	10Gbps	1Gbps	1Gbps	1Gbps	1Gbps	0Kbps	0Kbps

Box ID: WanRaptor
 Serial Number: 1234
 2018/09/04-10:47:50

Interfaces Status Leds: ● Up ● Down ● Emulating

Emulations Logs System Performance **System Settings** Support admin

Box Info Management Ports Settings Updates and Security

Box

Box Id

wanraptor

Reset Save

Date/Time Settings

Mode
 Manual

Timezone
 America/New_York

Date
 04/09/2018

Time
 10 : 47

Reset Save

System Setting Tab
 Allows the WanRaptor Box ID Set & System Date/Time.
 Allows user to set IP Management Port Addresses.
 Updates and Security allows Updates & System Licence type Trial or Full



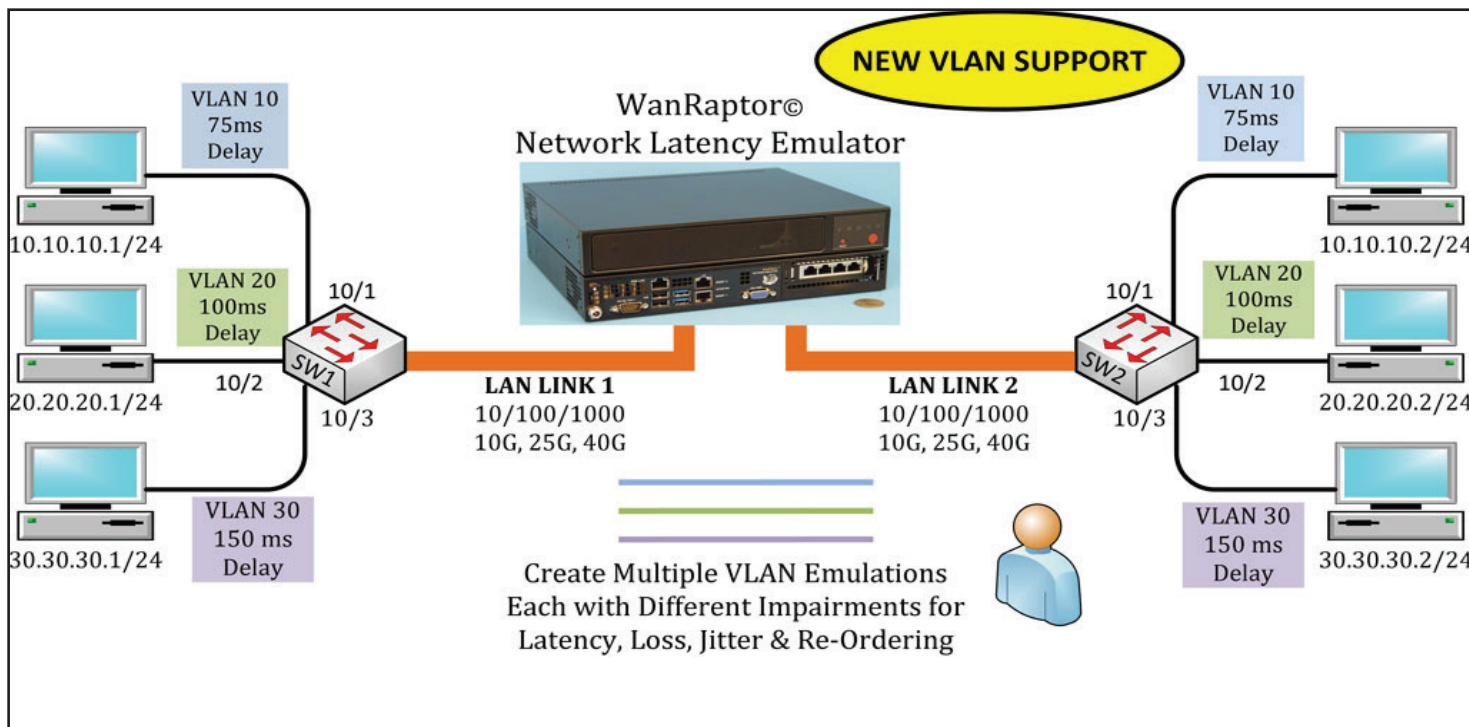
EAST COAST DATACOM, INC.

245 Gus Hipp Boulevard, STE 3 • Rockledge, FL 32955-4812 U.S.A.

TEL: (321) 637-9922

WEB SITE: www.ecdata.com

FAX: (321) 637-9980



WanRaptor® NETWORK EMULATOR
Host ID: ecdatalab
Serial: 05190046
2020/05/25-17:33:01

Interfaces Status Leds: ● Up ● Down ● Emulating

MGMT1 1Gbps ● MGMT2 1Gbps ● ENS7F1 10Gbps ● ENS7F0 10Gbps ● ENS2F3 1Gbps ● ENS2F2 1Gbps ● ENS2F1 1Gbps ● ENS2F0 1Gbps ●

Emulations Logs System Performance System Settings Support admin

Vlan 1 Vlan 2 Vlan 3 Vlan 4 Vlan 5 Vlan 6 Vlan 7 Vlan 8 Vlan 9 Vlan 10

Vlan ID: 10

ens7f1 → ens7f0

Delay Settings

Delay Type: Constant

Delay Value: 125 ms

Range: 0-1750ms

Loss Settings

Loss Type: Select...

Bandwidth Settings

Bandwidth: Ex: 10.5Mbps Gbps

Note: use Kbps when setting Bandwidth at rates below 10 Mbps

Range: 0Kbps-10Gbps

ens7f0 → ens7f1

Set different configuration: ☐

Delay Settings

Delay Type: Constant

Delay Value: 125 ms

Range: 0-1750ms

Loss Settings

Loss Type: Select...

Bandwidth Settings

Bandwidth: Ex: 10.5Mbps Gbps

Note: use Kbps when setting Bandwidth at rates below 10 Mbps

Range: 0Kbps-10Gbps

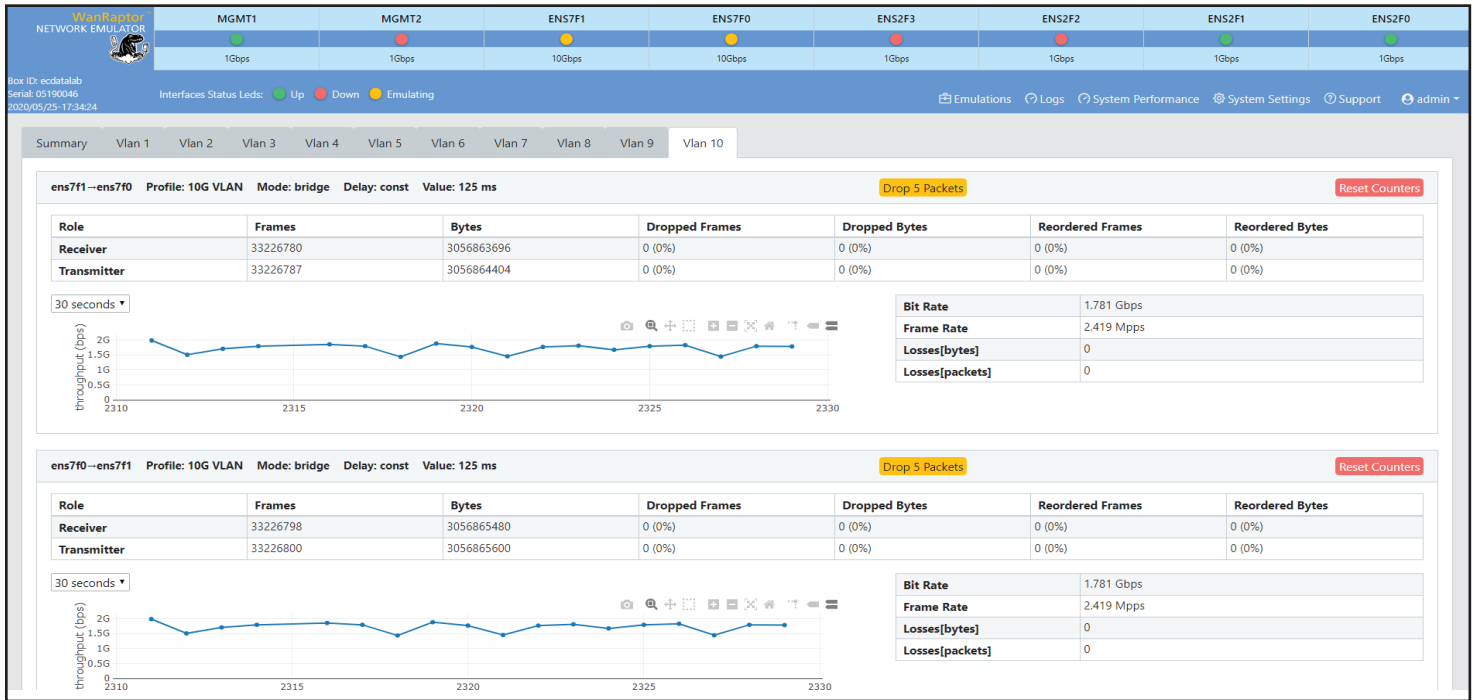
EAST COAST DATACOM, INC.

245 Gus Hipp Boulevard, STE 3 • Rockledge, FL 32955-4812 U.S.A.

TEL: (321) 637-9922

WEB SITE: www.ecdata.com

FAX: (321) 637-9980



Test Applications **Test Configurator** **Timer** **System** EXAMPLE: VLAN STREAMS SENT FROM EXFO TO WANRAPTOR

Port 1 - Streams

	Stream Name	Frame Size	TX Rate (Gbit/s)	Framing	VLAN	Addressing MAC/IP
1	Stream 1	68	1.00000	UDP	1 / 0	Src: 10.20.30.10 Dst: 10.20.30.11
2	Stream 2	68	1.00000	UDP	2 / 0	Src: 10.20.30.12 Dst: 10.20.30.13
3	Stream 3	68	1.00000	UDP	3 / 0	Src: 10.20.30.14 Dst: 10.20.30.15
4	Stream 4	68	1.00000	UDP	4 / 0	Src: 10.20.30.16 Dst: 10.20.30.17
5	Stream 5	68	1.00000	UDP	5 / 0	Src: 10.20.30.18 Dst: 10.20.30.19
6	Stream 6	68	1.00000	UDP	6 / 0	Src: 10.20.30.20 Dst: 10.20.30.21
7	Stream 7	68	1.00000	UDP	7 / 0	Src: 10.20.30.22 Dst: 10.20.30.23
8	Stream 8	68	1.00000	UDP	8 / 0	Src: 10.20.30.24 Dst: 10.20.30.25
9	Stream 9	68	1.00000	UDP	9 / 0	Src: 10.20.30.26 Dst: 10.20.30.27

Total TX Rate: 95.0000 %
Link Capacity: 5.0000 %

Global Options
Rate Unit: Gbit/s X QoS Metrics Tags Insertion

Copy Stream Restore Default

Profile MAC/IP/UDP Global

PASS
No Alarm
0d 00:03:46

Stop TX

Save Load Report Reset

Laser

Setup
Results
Functions

i ? X

EAST COAST DATACOM, INC.

245 Gus Hipp Boulevard, STE 3 • Rockledge, FL 32955-4812 U.S.A.

TEL: (321) 637-9922

WEB SITE: www.ecdata.com

FAX: (321) 637-9980

Test Status

In Progress

PASS

All 10 VLAN Streams
were measured starting at 35ms to
125ms - each stream 10ms difference

Start Time

5/25/2020 03:29:54 PM

All Frame Sizes: 68byte

Stream	Current Throughput (Gbit/s)	Frame Loss Count	Jitter (ms)	Latency (ms)	Out-of-Sequence Count	Verdict
1	0.99999	0	< 0.015	35.017	0	✓
2	0.99999	0	< 0.015	45.017	0	✓
3	0.99999	0	< 0.015	55.017	0	✓
4	1.00000	0	< 0.015	65.016	0	✓
5	0.99999	0	< 0.015	75.016	0	✓
6	0.99999	0	< 0.015	85.016	0	✓
7	0.99999	0	< 0.015	95.015	0	✓
8	0.99999	0	< 0.015	105.014	0	✓
9	0.99999	0	< 0.015	115.014	0	✓
10	0.49999	0	< 0.015	125.014	0	✓

All Frame Sizes: 68byte

WanRaptor, Network Latency Emulator 10G Test Results
VLAN Test Results - 10 VLAN's with bi-directional 68byte Frame Traffic
** We split a 10GbE Fiber link into ten VLAN's **
** Each VLAN has an extra 10ms Delay added for demonstration **

East Coast Datacom, Inc
WWW.ECDATA.COM

Stop

TX



Laser

Setup

Results

Functions

