



# FTBx-8870 Report

| K-20 Layer-2 Test Result |

PASS

|                |                          |
|----------------|--------------------------|
| Report Header: | K-20 Layer-2 Test Result |
| Report Title:  | K-20 Layer-2 Test Result |
| Report Date:   | 1/2/2025 11:21:02 PM     |
| Type:          | EtherSAM (Y.1564)        |

## Job Information

|                  |                           |
|------------------|---------------------------|
| Job ID:          | CHG0049485                |
| Circuit ID:      | Lumen: 04/KXGS/508928//PN |
| Contractor Name: | University of Washington  |
| Customer Name:   | esd101-k12                |
| Operator Name:   | kithc                     |
| Comment:         |                           |

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**Table of contents**

|                          |    |
|--------------------------|----|
| SUMMARY .....            | 1  |
| TEST RESULTS .....       | 5  |
| TEST SETUP .....         | 6  |
| FUNCTIONS .....          | 9  |
| SYSTEM INFORMATION ..... | 9  |
| LOGGER .....             | 12 |

## SUMMARY

### Results Summary

| Test Status                       |                      |
|-----------------------------------|----------------------|
| Service Configuration Test Status | Completed, Pass      |
| Service Performance Test Status   | Completed, Pass      |
| Pass/Fail Verdict                 | PASS                 |
| Start Time                        | 1/2/2025 11:05:16 PM |
| Duration                          | 00d:00:10:47         |
| Test Recovery                     | 0                    |

### EtherSAM

| Services Summary |              |                            |                          |
|------------------|--------------|----------------------------|--------------------------|
|                  | Service Name | Service Configuration Test | Service Performance Test |
| 1                | Service 1    | PASS                       | PASS                     |

| Service Configuration Summary |              |                 |                 |                  |                         |                 |
|-------------------------------|--------------|-----------------|-----------------|------------------|-------------------------|-----------------|
|                               | Service Name | Frame Loss Rate | Max Jitter (ms) | Max Latency (ms) | Max Throughput (Mbit/s) | Service Verdict |
| 1                             | Service 1    | 0.0E-00         | 0.12546         | 8.18601          | 1899.98                 | PASS            |

| Service Performance Summary |              |                 |                 |                  |                         |                 |
|-----------------------------|--------------|-----------------|-----------------|------------------|-------------------------|-----------------|
|                             | Service Name | Frame Loss Rate | Max Jitter (ms) | Max Latency (ms) | Avg Throughput (Mbit/s) | Service Verdict |
| 1                           | Service 1    | 0.0E-00         | 0.11305         | 8.29216          | 1899.99                 | PASS            |

|                          |                      |
|--------------------------|----------------------|
| <b>VLAN Preservation</b> | No Mismatch Detected |
|--------------------------|----------------------|

| RX Power Level       |       |      |
|----------------------|-------|------|
|                      | Min   | Max  |
| Power Range (dBm)    | -15.0 | 0.5  |
| RX Power Level (dBm) | -3.1  | -3.0 |

| RX Frequency           |                     |                     |
|------------------------|---------------------|---------------------|
|                        | Max Negative Offset | Max Positive Offset |
| Frequency Offset (ppm) | 0.0                 | 0.1                 |

## Alarms/Errors

| Alarms/Errors List              |      |
|---------------------------------|------|
| Active/Historical Alarms/Errors | None |

| Interface |         |
|-----------|---------|
| Alarms    | Seconds |
| LOS       | 0       |
| Frequency | 0       |

| Ethernet             |         |
|----------------------|---------|
| Alarms               | Seconds |
| Link Down            | 0       |
| Local Fault Detected | 0       |
| Local Fault Received | 0       |
| Remote Fault         | 0       |

| Errors    | Seconds  | Count | Rate    |
|-----------|----------|-------|---------|
| Block     | 0        | 0     | 0.00E00 |
| FCS       | 0        | 0     | 0.00E00 |
| Jabber    | 0        | 0     | 0.00E00 |
| Oversize  | Disabled |       |         |
| Runt      | 0        | 0     | 0.00E00 |
| Undersize | 0        | 0     | 0.00E00 |
| Total     |          | 0     |         |

| Clock Sync |         |
|------------|---------|
| Alarm      | Seconds |
| LOC        | 0       |

| IP/UDP/TCP   |         |       |         |
|--------------|---------|-------|---------|
| Errors       | Seconds | Count | Rate    |
| IP Checksum  | 0       | 0     | 0.00E00 |
| UDP Checksum | 0       | 0     | 0.00E00 |
| TCP Checksum | 0       | 0     | 0.00E00 |
| Total        |         | 0     |         |

## Setup Summary

|                         |                   |
|-------------------------|-------------------|
| <b>Application Type</b> | EtherSAM (Y.1564) |
|-------------------------|-------------------|

|                 |             |
|-----------------|-------------|
| <b>Topology</b> | Single Port |
|-----------------|-------------|

| Interface             | Port 1   |
|-----------------------|----------|
| <b>Interface/Rate</b> | 10GE LAN |
| <b>Connector</b>      | SFP+     |

|                     |      |
|---------------------|------|
| <b>Flow Control</b> | None |
|---------------------|------|

### EtherSAM

|                   |         |
|-------------------|---------|
| Pass/Fail Verdict | Enabled |
|-------------------|---------|

| Sub-Tests                  |          |                          |              |
|----------------------------|----------|--------------------------|--------------|
| Service Configuration Test |          | Service Performance Test |              |
| Ramp Test                  | Enabled  | Status                   | Enabled      |
| Burst selection            | Disabled | Duration                 | 00d:00:10:00 |
| Duration                   | 00:00:20 |                          |              |

| Ramp          |       |
|---------------|-------|
| Step Time (s) | 5     |
| Step Values   |       |
| 1             | 50 %  |
| 2             | 75 %  |
| 3             | 90 %  |
| 4             | 100 % |

### Services

|                                  |         |
|----------------------------------|---------|
| Total Committed TX Rate (Mbit/s) | 1900.00 |
|----------------------------------|---------|

| Services Summary |              |         |                    |              |                 |                  |                 |             |
|------------------|--------------|---------|--------------------|--------------|-----------------|------------------|-----------------|-------------|
|                  | Service Name | Profile | Frame Size (Bytes) | CIR (Mbit/s) | Max Jitter (ms) | Max Latency (ms) | Frame Loss Rate | CBS (Bytes) |
| 1                | Service 1    | Data    | EMIX               | 1900.00      | 2.00000         | 28.00000         | 1.0E-04         | --          |

## TEST RESULTS

### Ethernet Traffic

| Frame Type  | TX Count | RX Count |
|-------------|----------|----------|
| Multicast   | 0        | 23       |
| Broadcast   | 2        | 0        |
| Unicast     | 70921248 | 70921248 |
| Non-Unicast | 2        | 23       |
| Total       | 70921250 | 70921271 |

| Frame Size (Bytes) | RX Count | %    |
|--------------------|----------|------|
| < 64               | 0        | 0.0  |
| 64                 | 0        | 0.0  |
| 65 - 127           | 11820208 | 16.6 |
| 128 - 255          | 11820208 | 16.6 |
| 256 - 511          | 23       | 0.0  |
| 512 - 1023         | 11820208 | 16.6 |
| 1024 - 1518        | 23640416 | 33.3 |
| > 1518             | 11820208 | 16.6 |
| Total              | 70921271 |      |

## Detailed EtherSAM Results

### Service Configuration Test

#### Service 1 : Service 1

| Committed Steps |                 |                 |                  |         |                         |
|-----------------|-----------------|-----------------|------------------|---------|-------------------------|
| Committed Step  | Frame Loss Rate | Max Jitter (ms) | Max Latency (ms) | Verdict | Avg Throughput (Mbit/s) |
| 1-50%CIR        | 0.0E-00         | 0.12546         | 8.15158          | PASS    | 949.97                  |
| 2-75%CIR        | 0.0E-00         | 0.11527         | 8.15960          | PASS    | 1424.98                 |
| 3-90%CIR        | 0.0E-00         | 0.10450         | 8.18053          | PASS    | 1709.98                 |
| CIR             | 0.0E-00         | 0.09704         | 8.18601          | PASS    | 1899.98                 |

### Service Performance Test

#### Service 1 : Service 1

|                     | Average | Minimum   | Maximum | Estimate |
|---------------------|---------|-----------|---------|----------|
| Throughput (Mbit/s) | 1899.99 | 1899.94   | 1900.04 | N/A      |
| Jitter (ms)         | 0.01232 | < 0.00001 | 0.11305 | 0.01091  |
| Latency (ms)        | 8.06897 | 7.95967   | 8.29216 | N/A      |
|                     | Seconds | Count     | Rate    |          |
| Frame Loss          | 0       | 0         | 0.0E00  |          |
| Out-of-Sequence     | 0       | 0         | 0.0E00  |          |

## TEST SETUP

| Clock Synchronization |          |
|-----------------------|----------|
| Clock Mode            | Internal |

## Detailed Services Configuration



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|                                  |         |
|----------------------------------|---------|
| Layer Mode                       | Mixed   |
| IP Version                       | IPv4    |
| Global Pass/Fail Verdict         | Enabled |
| Total Committed TX Rate (Mbit/s) | 1900.00 |

## Service 1

| Service Profile    |                                |
|--------------------|--------------------------------|
| Service Name       | Service 1                      |
| Profile            | Data                           |
| Frame Size Type    | EMIX                           |
| Frame Size (Bytes) | 70, 128, 512, 1024, 1518, 9000 |

| SLA Parameters       |          |
|----------------------|----------|
| Information Rate     |          |
| CIR (Mbit/s)         | 1900.00  |
| Performance Criteria |          |
| Max Jitter (ms)      | 2.00000  |
| Max Latency (ms)     | 28.00000 |
| Frame Loss Rate      | 1.0E-04  |

## Test Parameters

| Framing         |             |
|-----------------|-------------|
| Frame Format    | Ethernet II |
| Network Layer   | IPv4        |
| Transport Layer | UDP         |
| VLAN            | None        |
| MPLS            | Disabled    |

## Addressing

|             | MAC               | IP Address                 | UDP Port |
|-------------|-------------------|----------------------------|----------|
| Source      | 00:03:01:F8:22:D8 | 10.112.0.1 / 255.255.255.0 | 49184    |
| Destination | 00:03:01:14:55:3D | 10.112.0.100               | 7        |

|                     |          |
|---------------------|----------|
| EtherType           | 0x0800   |
| Automatic IP (DHCP) | Disabled |
| TTL                 | 128      |
| TOS                 | 0x00     |
| Default Gateway     | Disabled |

## FUNCTIONS

### Ping & Trace Route

| Network                |                       |
|------------------------|-----------------------|
| Source MAC Address     | 00:03:01:F8:22:D8     |
| Source IP Address      | 10.112.0.1 (Stream 1) |
| Destination IP Address | 0.0.0.0               |

| Ping                  |      |
|-----------------------|------|
| Timeout (ms)          | 4000 |
| Delay (ms)            | 1000 |
| Data Size (Bytes)     | 32   |
| TTL                   | 128  |
| Type Of Service (TOS) | 0x00 |

| Ping Results |            |                                               |
|--------------|------------|-----------------------------------------------|
| No.          | Status     | Reply Details                                 |
| 1            | Successful | IP=10.112.0.100, Bytes=32, Time=8 ms, TTL=127 |

| Ping Statistics              |     |
|------------------------------|-----|
| Packets Transmitted          | 1   |
| Packets Received             | 1   |
| Percentage Lost (%)          | 0.0 |
| Minimum Round Trip Time (ms) | 8   |
| Maximum Round Trip Time (ms) | 8   |
| Average Round Trip Time (ms) | 8   |

| Trace Route   |      |
|---------------|------|
| Timeout (ms)  | 4000 |
| Max Hop Count | 128  |

## SYSTEM INFORMATION

|                                   |                           |
|-----------------------------------|---------------------------|
| <b>Product Name</b>               | Power Blazer Series       |
| <b>Version</b>                    | Power Blazer Series 1.124 |
| <b>Module ID</b>                  | FTBx-8870                 |
| <b>Slot ID</b>                    | 1                         |
| <b>Software Product Version</b>   | 1.124.0.53                |
|                                   | Power Blazer Series 1.124 |
| <b>Assembly Hardware Revision</b> | B                         |
| <b>Serial Number</b>              | 1343184                   |
| <b>Calibration Date</b>           | 4/20/2020 8:28:00 PM      |

## Pluggable Module

|                             |                                  |
|-----------------------------|----------------------------------|
| <b>Module ID</b>            | SFP+                             |
| <b>Vendor Name</b>          | WFS                              |
| <b>Part Number</b>          | WFSP-1396-10-J                   |
| <b>Serial Number</b>        | 3172922861                       |
| <b>Hardware Revision</b>    | 1.0                              |
| <b>Connector Type</b>       | LC                               |
| <b>Speed</b>                | 10G                              |
| <b>Type/Compliance Code</b> | LR, 10.0 km (SMF)                |
| <b>Wavelength</b>           | 1310 nm                          |
| <b>Mode</b>                 | Single-Mode Fiber                |
| <b>Power Class</b>          | Power Class 1 Module (<= 1W max) |
| <b>Temperature (Max)</b>    | 34.9 °C                          |

## Software Options

|                 |                                                                  |          |
|-----------------|------------------------------------------------------------------|----------|
| 100electrical   | Ethernet 100Base-TX (Electrical) Interface                       | Enabled  |
| 100optical      | Ethernet 100Base-FX (Optical) Interface                          | Disabled |
| 10electrical    | Ethernet 10Base-T (Electrical) Interface                         | Enabled  |
| 10G_LAN         | Ethernet 10G LAN (Optical) and 10GBASE-T (Electrical) interfaces | Enabled  |
| 10G_WAN         | Ethernet 10G WAN optical interface                               | Enabled  |
| 155M            | 155 Mbit/s                                                       | Disabled |
| 1588PTP         | 1588 Precision Time Protocol                                     | Disabled |
| 2.5-5GE         | Ethernet 2.5GBASE-T and 5GBASE-T (Electrical) interfaces         | Disabled |
| 2488M           | 2.488 Gbit/s                                                     | Disabled |
| 52M             | 52 Mbit/s                                                        | Enabled  |
| 622M            | 622 Mbit/s                                                       | Disabled |
| 9953M           | 9.953 Gbit/s                                                     | Disabled |
| Cable_Test      | Cable Test                                                       | Disabled |
| CPRI            | CPRI 2.4576 Gbit/s and 3.072 Gbit/s                              | Disabled |
| CPRI-1.2G       | CPRI 1.2288 Gbit/s                                               | Disabled |
| CPRI-10.1G      | CPRI 10.1376 Gbit/s                                              | Disabled |
| CPRI-4.9G       | CPRI 4.9152 Gbit/s                                               | Disabled |
| CPRI-6.1G       | CPRI 6.144 Gbit/s                                                | Disabled |
| CPRI-9.8G       | CPRI 9.8304 Gbit/s                                               | Disabled |
| DS1-FDL         | DS1/1.5M Facility Data Link                                      | Disabled |
| DSn             | Digital Signal (DS1, DS3)                                        | Disabled |
| eCPRI-10G       | eCPRI over 10G Ethernet                                          | Disabled |
| EoE             | Ethernet over Ethernet Encapsulation (10GE and less)             | Disabled |
| EoOTN           | Ethernet over Optical Transport Network                          | Disabled |
| ETH-OAM         | Carrier Ethernet OAM Test Application                            | Disabled |
| FC-10X          | Fibre Channel 10X                                                | Disabled |
| FC-1X           | Fibre Channel 1X                                                 | Disabled |
| FC-2X           | Fibre Channel 2X                                                 | Disabled |
| FC-4X           | Fibre Channel 4X                                                 | Disabled |
| FC-8X           | Fibre Channel 8X                                                 | Disabled |
| GCC-BERT        | OTN Overhead BERT and Synchronization Validation                 | Disabled |
| GigE_Electrical | Ethernet 1000Base-T (Electrical) Interface                       | Enabled  |
| GigE_Optical    | Ethernet 1000Base-X (Optical) Interface                          | Enabled  |
| iOptics         | Intelligent Pluggable Optic Test Application                     | Disabled |
| iSAM            | Intelligent Service Activation Methodology                       | Disabled |
| L2-Transparency | L2CP Handling Test in EtherSAM                                   | Disabled |
| LINK-OAM        | Link OAM                                                         | Disabled |
| LLDP            | LLDP Neighbor Discovery                                          | Disabled |
| MPLS            | MPLS Encapsulation (10GE and less)                               | Disabled |
| NI-CSU          | NI/CSU Emulation                                                 | Disabled |
| OBSAI           | OBSAI 3.072 Gbit/s                                               | Disabled |
| OBSAI-1.5G      | OBSAI 1.536 Gbit/s                                               | Disabled |
| OBSAI-6.1G      | OBSAI 6.144 Gbit/s                                               | Disabled |
| ODU0            | OTN ODU0                                                         | Disabled |
| ODUflex         | OTN ODUflex                                                      | Disabled |
| ODUMUX          | ODU Multiplexing Payload Type 20 and 21                          | Disabled |

|               |                                                             |          |
|---------------|-------------------------------------------------------------|----------|
| OTN-INTR-THRU | OTN Intrusive Through Mode                                  | Disabled |
| OTU1          | Optical Transport Unit-1 (2.7 Gbit/s)                       | Disabled |
| OTU2          | Optical Transport Unit-2 (10.7 Gbit/s)                      | Disabled |
| OTU2-1e-2e    | Optical Transport Unit-2 Overclocked (11.049/11.096 Gbit/s) | Disabled |
| OTU2-1f-2f    | Optical Transport Unit-2 Overclocked (11.270/11.317 Gbit/s) | Disabled |
| PBBTE         | Provider Backbone Bridge Encapsulation (10GE and less)      | Disabled |
| PDH           | Plesiochronous Digital Hierarchy (E1, E3, E4)               | Disabled |
| RFC6349       | RFC 6349 Test Application (25GE and less)                   | Disabled |
| SDH           | Synchronous Digital Hierarchy                               | Enabled  |
| SONET         | Synchronous Optical Network                                 | Enabled  |
| SyncE         | Synchronous Ethernet                                        | Disabled |
| TCM           | Tandem Connection Monitoring HO/LO                          | Disabled |
| TCP-THPUT     | Tcp Throughput Test Application                             | Disabled |
| TST-OAM       | Test Over Service OAM                                       | Disabled |

## LOGGER

| ID | Start Time        | Event                              | Duration | Details                                                                                   |
|----|-------------------|------------------------------------|----------|-------------------------------------------------------------------------------------------|
| 1  | 01/02 11:05:16 PM | Test Started                       |          | 2025-01-02                                                                                |
| 2  | 01/02 11:05:20 PM | Service Configuration test started |          | 2025-01-02                                                                                |
| 3  | 01/02 11:05:54 PM | Service Performance test started   |          | 2025-01-02                                                                                |
| 4  | 01/02 11:16:03 PM | Test Stopped                       |          |  PASS |