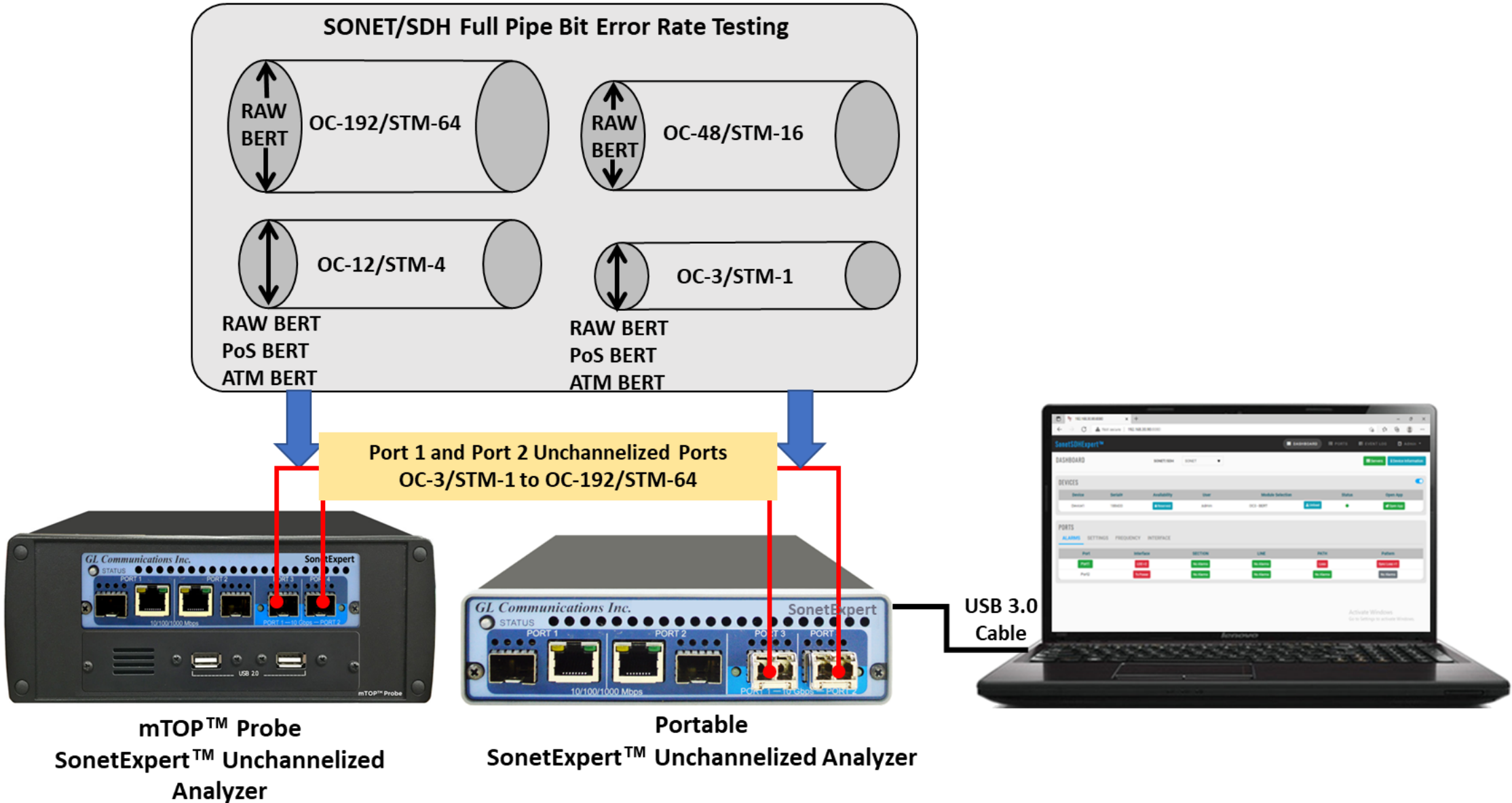

SonetExpert™ (SDH) Unchannelized Analyzer

OC-3/STM-1, OC-12/STM-4, OC-48/STM-1 and OC-192/STM-64

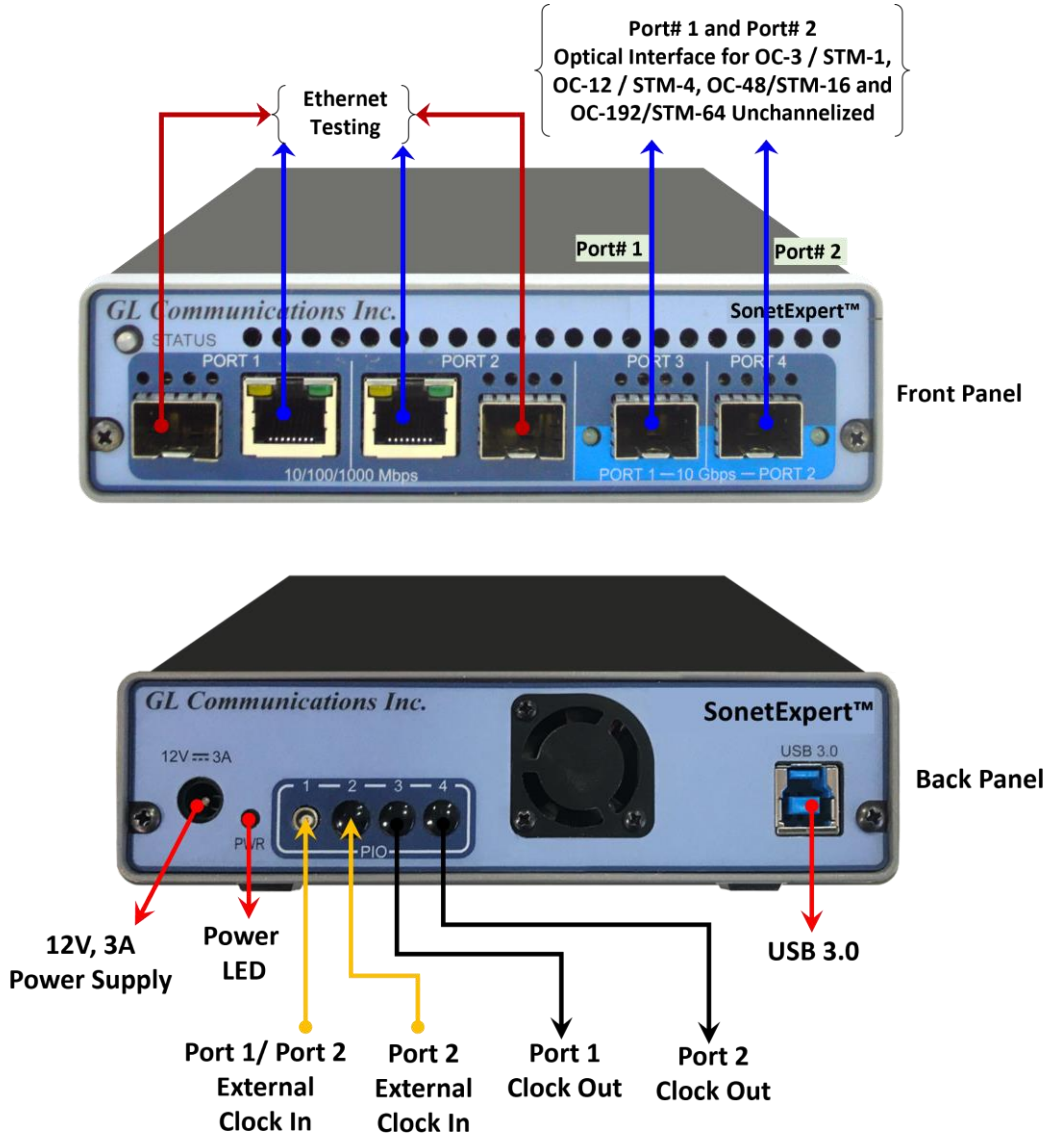


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Website: <https://www.gl.com>

SonetExpert™ Unchannelized Analyzer



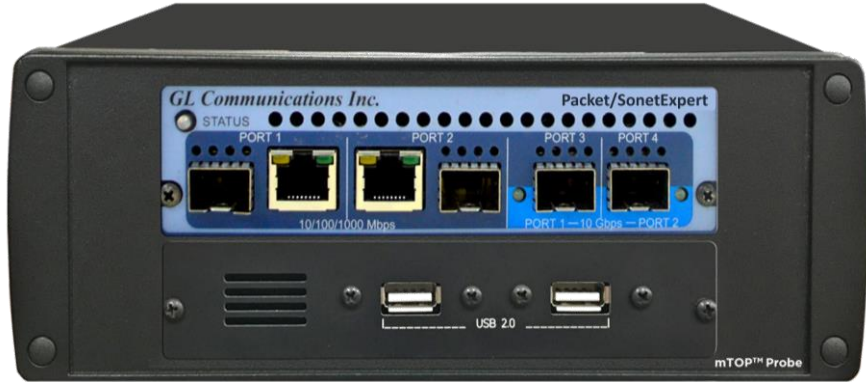
SonetExpert™ Portable Hardware Specification



Interfaces	<ul style="list-style-type: none"> • 2 x Unchannelized Ports (OC-3/STM-1, OC-12/STM-4, OC-48/STM-16, OC-192/STM-64) • Single Mode or Multi Mode Fiber SFP support with LC connector • USB 3.0 Port • External Clock: Input Port 1, Port 2 and Output Port 1, Port 2
T1/E1	<ul style="list-style-type: none"> • Sync Loss, HDB3 Violation, Carrier Loss, Frame Error, Remote, Distant MF, AIS, BPV Errors, CRC Errors, Frame Errors, Transmit Under Run, Receive Over Run
Dimensions	<ul style="list-style-type: none"> • Length: 8.45 in. (214.63 mm) • Width: 5.55 in. (140.97 mm) • Height: 1.60 in (40.64 mm)
External Power Supply	<ul style="list-style-type: none"> • +12 Volts (Medical Grade), 3 Amps

SonetExpert™ mTOP™ Probe Unit

- PacketExpert™ hardware is used for both PacketExpert /SonetExpert™



**SonetExpert™ mTOP™ Probe Solution
(Front Panel)**



**SonetExpert™ mTOP™ Probe Solution
(Back Panel)**

Physical Specifications	<ul style="list-style-type: none"> • Height: 3.0 Inches (76.2 mm) • Length: 10.4 Inches (264.16 mm) • Width: 8.4 Inches (213.36 mm)
SonetExpert™ interfaces	<ul style="list-style-type: none"> • 4x 1G Base-X Optical OR 10/100/1000 Base-T Electrical • 2x 10G Base-SR, -LR -ER Optical option • 2 x 100 Mbps Base-FX optical interface • Single Mode or Multi Mode Fiber SFP support with LC connector
External Power Supply	<ul style="list-style-type: none"> • +12 (Medical Grade), 3 Amps
SBC Specifications	<ul style="list-style-type: none"> • Intel Core i3 or optional i7 NUC Equivalent • Windows® 10 64-bit Pro Operating System • USB 2.0 or 3.0 Ports, ATX Power Supply • 256 GB Hard drive, 8G Memory (Min) • Two HDMI ports (Optional VGA to HDMI interface) • External USB based Wi-Fi adaptor

SonetExpert™ mTOP™ 1U Rack Solution



Port# 1 and Port# 2
Optical Interface for OC-3/192 - STM-1/64
Unchannelized

**SonetExpert™ mTOP™ 1U Rack Solution
(Front Panel)**



**SonetExpert™ mTOP™ 1U Rack Solution
(Back Panel)**

Physical Specifications	<ul style="list-style-type: none"> • Height: 1U Rack • Length: 16 Inches • Width: 19 Inches
SonetExpert™ interfaces (1 unit)	<ul style="list-style-type: none"> • Two Unchannelized Ports (OC-3/STM-1, OC-12/STM-4, OC-48/STM-16, OC-192/STM-64) • Single Mode or Multi Mode Fiber SFP support with LC connector
SBC Specifications	<ul style="list-style-type: none"> • Embedded SBC, 1x SonetExpert™ • Intel Core i7, Windows® 11 64-bit Pro Operating System • USB 3.0 and 2.0 Ports, ATX Power Supply • USB Type C ports, Ethernet 2.5GigE port • 225GB Hard drive, 8G Memory

Optical Connectors and SFP Modules



LC Connectors



1310 or 1550 nm SFP Module

Introduction

- SONET = Synchronous optical networking. Used in North America
- SDH = Synchronous digital hierarchy. Used in the rest of the world
- SONET and SDH are optical transmission protocols for high-speed data, voice and video traffic
- Data rates
 - **SONET**: Optical Carrier (OC) - N
 - **SDH**: Synchronous Transport Module (STM) - N
- SONET/SDH can carry channelized and unchannelized data
 - Channelized = T1 E1.
 - OC-3/STM-1 supports 84 T1s or 63 E1s
 - OC-12/STM-4 supports 336 T1s or 252 E1s
 - OC-48/STM-16 supports
 - OC-192/STM-64 supports
 - Unchannelized = Packet over SONET (PoS), Asynchronous Transfer Mode (ATM) and RAW Analyzer

SONET or SDH Line Rates

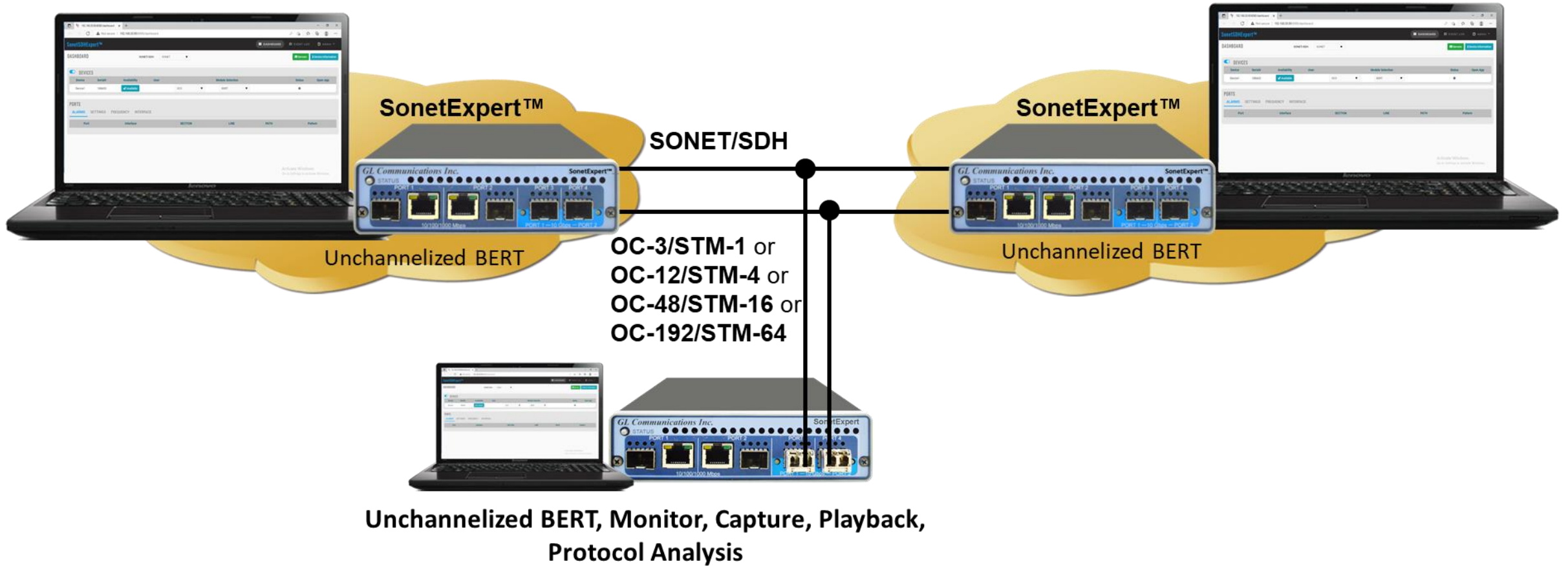
Electrical	Optical (SONET)	Line Rates	SDH Equivalent
STS-1	OC-1	51.84 Mbps	—
STS-3	OC-3	155.52 Mbps	STM-1
STS-9	OC-9	466.56 Mbps	—
STS-12	OC-12	622.08 Mbps	STM-4
STS-18	OC-18	933.12 Mbps	—
STS-24	OC-24	1.2 Gbps	—
STS-36	OC-36	1.9 Gbps	—
STS-48	OC-48	2.5 Gbps	STM-16
STS-96	OC-96	5 Gbps	—
STS-192	OC-192	10 Gbps	STM-64
STS-768	OC-768	40 Gbps	—
STS-3072	OC-3072	160 Gbps	—

Main Features

- Wirespeed processing of ATM, PoS or RAW data for Tx and Rx for both ports
- Supports BERT testing at rates from OC-3 to OC-192
- Ability to capture or playback to or from disk at full rate in both directions for all ports for detailed offline analysis
- Comprehensive transmit/receive testing capabilities; transmitting and verifying data with incrementing sequence numbers with each packet/cell
- Easy to use and flexible Bit Error Rate Test (BERT) application for ATM, POS and RAW Analyzers
- SCAN feature gives a complete overview of the incoming SONET/SDH traffic in an easy and intuitive graphical display and helps technicians to quickly identify the structure of unknown SONET/SDH traffic
- ATM (AAL2, AAL5) Protocol Analyzer, UMTS Protocol Analyzer, PPP (IP and higher layer protocols) Protocol Analyzer
- ATM
 - ATM Forum User Network Interface Specification
 - ATM physical layer for Broadband ISDN according to CCITT Recommendation I.432
- PPP over SONET (PoS)
 - Point-to-Point Protocol (PPP) over SONET/SDH specification according to RFC 2615 (1619) / 1662 of the PPP Working Group of the Internet Engineering Task Force (IETF)
- OC-3/OC-12/STM-1/STM-4 Transparent Payload
 - Analyzer processes SONET/SDH payload in transparent (RAW) mode without any transport protocols

SonetExpert™ SONET/SDH Unchannelized Analyzer

SonetExpert™ Unchannelized Setup



SonetExpert™ Rest Server

Sonet Expert Rest Server

File View Applications Help

No. of SonetExpert Devices	1
Server Version	24.3.6.0
Server Status	Started

Start/Stop Server

IP Address: 192.168.30.20 Port: 3100

Auto Start Show On Startup

Tue Mar 12 2024 02:29:31
Detected 1 device
Starting Rest Server...successful
Checking http/database servers status...
Http server not running, attempting to start...successful
Http Server running on 192.168.30.20:8080
Database Server running on 192.168.30.20:9899
Rest Server running on 192.168.30.20:3100

!!!!!!!!!!!!!! Server ready !!!!!!!!!!!!!!!
Click the "Open GUI" button above to open the GUI in a browser or
Open any browser and type the following url to start using SonetExpert

<http://192.168.30.20:8080>

SonetExpert™ Unchannelized Web Interface

Login Page

← → ↻ Not secure 192.168.1.156:8080/login

SonetSDHExpert™

Login

Username

Password

Login

Web Client

SonetSDHExpert™

Dashboard Event Log

Dashboard SONET/SDH SONET Servers Device Information

Devices

Device	Serial#	Availability	User	Module Selection	Status	Open App
Device1	188399	Reserved	Admin	OC3	BERT	Load

Ports

Alarms Settings Frequency Interface

Port Laser Interface SECTION LINE PATH Pattern

Clock Source and Operation Mode

SonetSDHExpert™ Dashboard Ports Event Log Admin

Dashboard SONET/SDH SONET Servers Device Information

Devices ON

Device	Serial#	Availability	User	Module Selection	Status	Open App
Device1	188399	Reserved	Admin	OC12 - ATM BERT	Unload	Open App

Ports Reset All All Ports Laser ON OFF

Alarms Settings Frequency Interface

Port	Clock Source	Frequency	Operation Mode	Scrambler
Port1	Internal		Tx/Rx	ON
Port2	Internal		Tx/Rx	ON

Clock Source Dropdown (Port2): Internal, Recovered, Recovered (Opposite Port), External

Operation Mode Dropdown (Port2): Tx/Rx, Loopback

Tx Rx Frequency

SonetSDHExpert™ Dashboard Ports Event Log Admin

Dashboard SONET/SDH SONET Servers Device Information

Devices ON

Device	Serial#	Availability	User	Module Selection	Status	Open App
Device1	188399	Reserved	Admin	OC12 - ATM BERT	Unload	Open App

Ports Reset All All Ports Laser ON OFF

Alarms Settings Frequency Interface

Port	Frequency (Hz)	Alarm	Freq Deviation (ppm)	Freq Max Deviation (ppm)	Tx Frequency	
Port1	Tx	622,080,624	●	1	2 0.7	-1 +1
	Rx	622,080,436	●	0.7		
Port2	Tx	622,079,380	●	-1	-2 0.7	-1 +1
	Rx	622,080,434	●	0.7		

SFP Module Interfaces

SonetSDHExpert™ | Dashboard | Ports | Event Log | Admin

Dashboard | SONET/SDH | SONET | Servers | Device Information

Devices

Device	Serial#	Availability	User	Module Selection	Status	Open App
Device1	188399	Reserved	Admin	OC12 - ATM BERT	Unload	Open App

Ports | Reset All | All Ports Laser ON OFF

Alarms | Settings | Frequency | **Interface**

Port	SFP Module Plugin Status	LOS	Rx Power	Tx Power	Rx Power Level(dBm)	Tx Power Level(dBm)	SFP Module Temperature (°C)
Port1	Plugged In	●	●	●	-11.84	-10.97	44.23
Port2	Plugged In	●	●	●	-10.17	-11.16	41.54

ATM BERT Configuration

Laser ON Select Port Port1 (OC12 - ATM BERT) START Reset BERT Status IDLE

Alarms **BERT** Impairments Graph Sonet Mux/Demux Interface System Monitor

Configuration Results

Apply Default Cancel

ATM Header Fields

Tx/Rx Coupled

Tx Configuration

User/Network Interface UNI NNI

Generic Flow Control

Virtual Path Identifier

Virtual Channel Identifier

Payload Type

Cell Loss Priority

ATM Header Fields

Tx/Rx Coupled

Rx Configuration

User/Network Interface UNI NNI

Generic Flow Control Any

Virtual Path Identifier Any

Virtual Channel Identifier Any

Payload Type Any

Cell Loss Priority Any

Payload Configuration

Tx/Rx Coupled

Tx Configuration

Pattern Type

Invert Pattern

Sequence Number

Payload Configuration

Tx/Rx Coupled

Rx Configuration

Pattern Type

Invert Pattern

Sequence Number

Traffic Rate

Tx Configuration

Bandwidth Type

Bandwidth Rate

BERT Results

SonetSDHExpert™ Dashboard Ports Event Log Admin

Laser ON Select Port Port1 (OC12 - ATM BERT) STOP Reset BERT Status SYNC

Alarms **BERT** Impairments Graph Sonet Mux/Demux Interface System Monitor

Configuration Results

Alarms

Alarm	Status	Seconds	Count
Bit Error	●	0	0
Sync Loss	●	0	0

Bits Analysis

	Instantaneous	Total
Bit Error Rate	0.00e+0	0.00e+0
Bit Error Count	0	0
Bits Received	542,525,952	772,173,496,320

Time

Total Seconds	Error Seconds	Error Free Seconds
1,324	0	1,324

Status

Description	Tx	Rx
Status	Running	Running
Running Time	4537	4539
Start Time	Tue Mar 12 2024 02:32:20	Tue Mar 12 2024 02:32:19
End Time	-	-

Cell Statistics

Description	Tx	Rx
Total Cell Count	2,010,878,065	2,010,868,480
Traffic Cell Count	2,010,878,065	2,010,868,480
Idle Cell Count	0	0
HEC Error Count		0
Test Cell Count		2,010,868,480
Non Test Cell Count		0

Alarms/Error Monitoring

- Monitors and reports all SONET/SDH alarms → Section, Line, Path alarms (SONET) or RSOH, MSOH, HP alarms (SDH)

➤ Section/RSOH Alarms

SONET (Section)	SDH (RSOH)
Loss of Frame	
B1 BIP	
Out of Frame alarm	

➤ Line/MSOH Alarms

SONET (Line)	SDH (MSOH)
AIS-L	MS-AIS
RDI-L	MS-RDI
B2 BIP	B2 BIP
REI-L	MS-REI

➤ Path/HP Alarms

SONET (Path)	SDH (HP)
AIS-P	AU-AIS
LOP-P	AU-LOP
Loss	Loss
RDI-P	HP-RDI
UNEQ-P	HP-UNEQ
B3 BIP	B3 BIP
REI-P	HP-REI
PLM	PLM
All Ones	All Ones
OC Levels	STM Levels
Pointer Adjustment	
New Pointer	

SONET or SDH Alarms

Alarms BERT Impairments Graph Sonet Mux/Demux Interface System Monitor

Interface

Alarms	Status	Seconds
LOS	●	0
Rx Frequency	●	0
Rx Power	●	0
Tx Frequency	●	0
Tx Power	●	0

BERT Alarms

Alarm	Status	Seconds	Count
Bit Error	●	0	0
Sync Loss	●	0	0

Frequency

Name	Freq (Hz)	Freq Deviation (ppm)	Alarm/Warning	Details	Freq Max Deviation (ppm)
Rx Frequency	155,520,000	0			0
Tx Frequency	155,520,000	0			0

SFP Real Time Diagnostics

Name	Value	Alarm/Warning	Details
Rx Power (dBm)	-3.84		
Tx Power (dBm)	-1.6		

Section

Alarms	Status	Seconds	Count
Loss Of Frame	●	0	NaN
B1 BIP	●	0	0
Out Of Frame	●	0	NaN

Line

Alarms	Status	Seconds	Count
AIS-L	●	0	NaN
RDI-L	●	0	NaN
B2 BIP	●	0	0
REI-L	●	0	0

Path

Alarms	Status	Seconds	Count
AIS-P	●	0	NaN
LOP-P	●	0	NaN
Loss	●	0	NaN
RDI-P	●	0	NaN
UNEQ-P	●	0	NaN
B3 BIP	●	0	0
REI-P	●	0	0
PLM	●	0	NaN
All Ones	●	0	NaN
OC Levels	●	0	NaN
Pointer Adjustments	●	0	0
New Pointers	●	0	0

Impairments

SonetSDHExpert™ Dashboard Ports Event Log Admin

Laser ON Select Port Port1 (OC12 - ATM BERT) STOP Reset BERT Status SYNC

[Alarms](#) [BERT](#) [Impairments](#) [Graph](#) [Sonet](#) [Mux/Demux](#) [Interface](#) [System Monitor](#)

Alarm Generation

Loss Of Frame	<input type="checkbox"/>
AIS-L	<input type="checkbox"/>
RDI-L	<input type="checkbox"/>
AIS-P	<input type="checkbox"/>
LOP-P	<input type="checkbox"/>
RDI-P	<input type="checkbox"/>
UNEQ-P	<input type="checkbox"/>

Error Insertion

B1 BIP	Single	None ▼
B2 BIP	Single	None ▼
REI-L	Single	
B3 BIP	Single	None ▼
REI-P	Single	
Bit Error	Single	None ▼

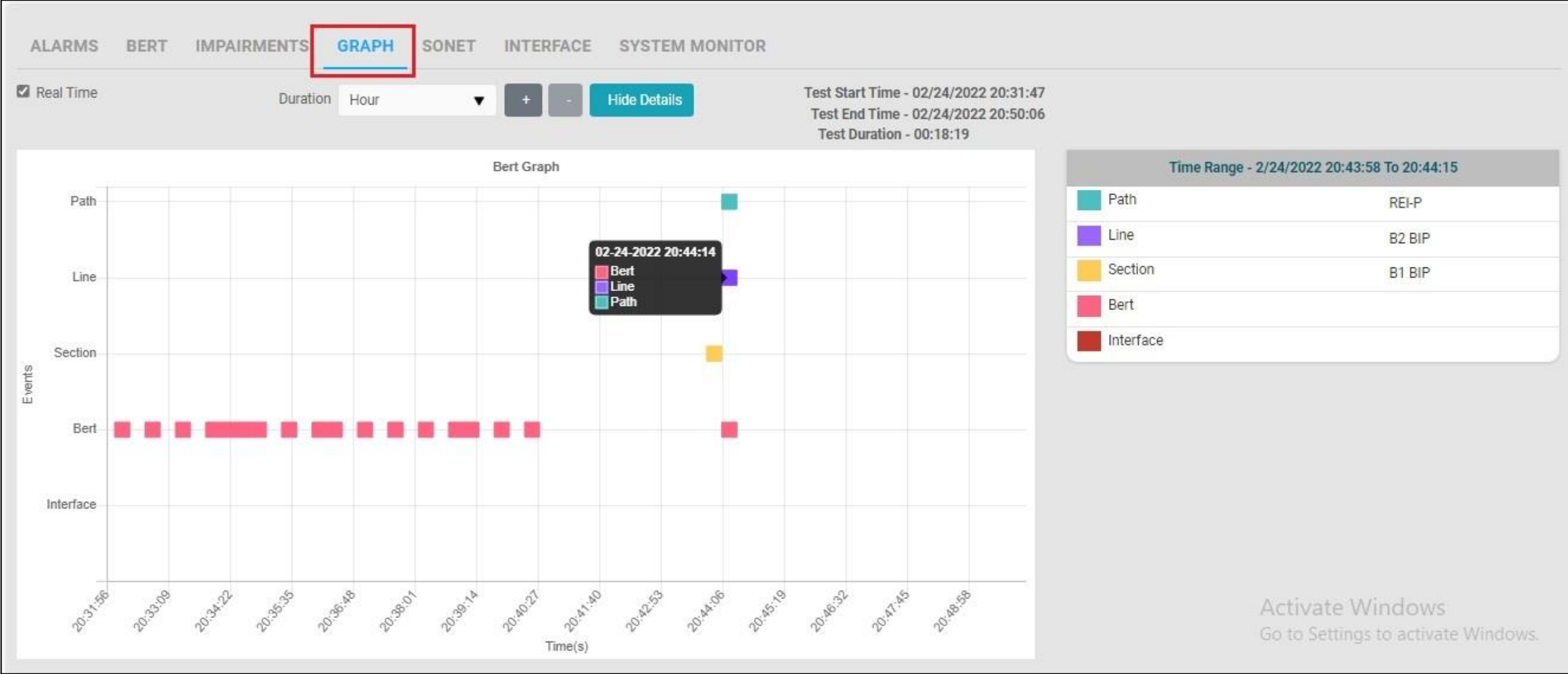
Sonet Pointer and Justification

H1/H2 Pointer Apply

Insert Justification

Type Positive ▼ Single Rate None ▼

Graph



SONET Overhead - ATM

SonetSDHExpert™ Dashboard Ports Event Log Admin

Laser ON Select Port Port1 (OC12 - ATM BERT) STOP Reset BERT Status SYNC

Alarms BERT Impairments Graph **Sonet** Mux/Demux Interface System Monitor

Overhead Statistics

Tx Channel 1 Rx Channel 1 Default

TOH (Tx Rx)						POH			
A1 F6 F6	A1 F6 F6	A1 F6 F6	A2 28 28	A2 28 28	A2 28 28	J0 01 02	Z0 05 06	Z0 09 0A	J1 AC 6E
B1 D6 F5			E1 00 00			F1 00 00			B3 1F 89
D1 00 00			D2 00 00			D3 00 00			C2 13 13
H1 93 62	H1 93 93	H1 93 93	H2 FF 0A	H2 FF FF	H2 FF FF	H3 00 00	H3 00 00	H3 00 00	G1 A0 B0
B2 7A 5A	B2 0D 12	B2 BE 01	K1 00 00			K2 00 00			F2 DB C6
D4 00 00			D5 00 00			D6 00 00			H4 BC 9E
D7 00 00			D8 00 00			D9 00 00			Z3: BC 9E
D10 00 00			D11 00 00			D12 00 00			Z4: BC 9E
S1 00 00	Z1_0 00 00	Z1_1 00 00	Z2 00 00	Z2 00 00	Z2 00 00	E2 00 00			N1 00 00

MUX/DEMUX

The screenshot displays the SonetSDHExpert™ web interface. At the top, there is a navigation bar with the following items: Dashboard, Ports (highlighted), Event Log, and Admin. Below the navigation bar, there is a control panel with a yellow 'Laser ON' button, a 'Select Port' dropdown menu set to 'Port1 (OC12 - ATM BERT)', a red 'STOP' button, a green 'Reset' button, a 'BERT Status' indicator showing 'SYNC', and a warning icon. A secondary navigation bar contains tabs for Alarms, BERT, Impairments, Graph, Sonet, Mux/Demux (highlighted), Interface, and System Monitor. The main content area shows a configuration form with three fields: 'Current Level' set to 'OC12', 'Mux/Demux Level' set to 'OC3', and 'Channel#' set to '3'. An 'Apply' button is located to the right of the 'Channel#' field. The text '(1-4)' is visible next to the channel number.

SFP Interface

SonetSDHExpert™ Dashboard Ports Event Log Admin

Laser ON Select Port Port1 (OC12 - ATM BERT) STOP Reset BERT Status SYNC

[Alarms](#) [BERT](#) [Impairments](#) [Graph](#) [Sonet](#) [Mux/Demux](#) [Interface](#) [System Monitor](#)

SFP Module **Plugged In**

Interface

Alarms	Status	Seconds
LOS	●	0
Rx Frequency	●	0
Rx Power	●	0
Tx Frequency	●	0
Tx Power	●	0
SFP Fault	●	0

Frequency

Name	Frequency (Hz)	Freq Deviation (ppm)	Alarm/Warning	Details	Freq Max Deviation (ppm)
Rx Frequency	622,080,434	0.7			0.7
Tx Frequency	622,080,622	1			1

SFP Real Time Diagnostics

Name	Value	Alarm/Warning	Details
Rx Power (dBm)	-11.84		
Tx Power (dBm)	-10.94		
Temperature (°C)	44.23		

SFP Alarm and Warning Thresholds

Name	Low Alarm	Low Warning	High Warning	High Alarm
Rx Power (dBm)	-31.54	-30.96	0	0.5
Tx Power (dBm)	-15.52	-15.08	-8.01	-7.52
Temperature (°C)	-11520	-10240	85	90

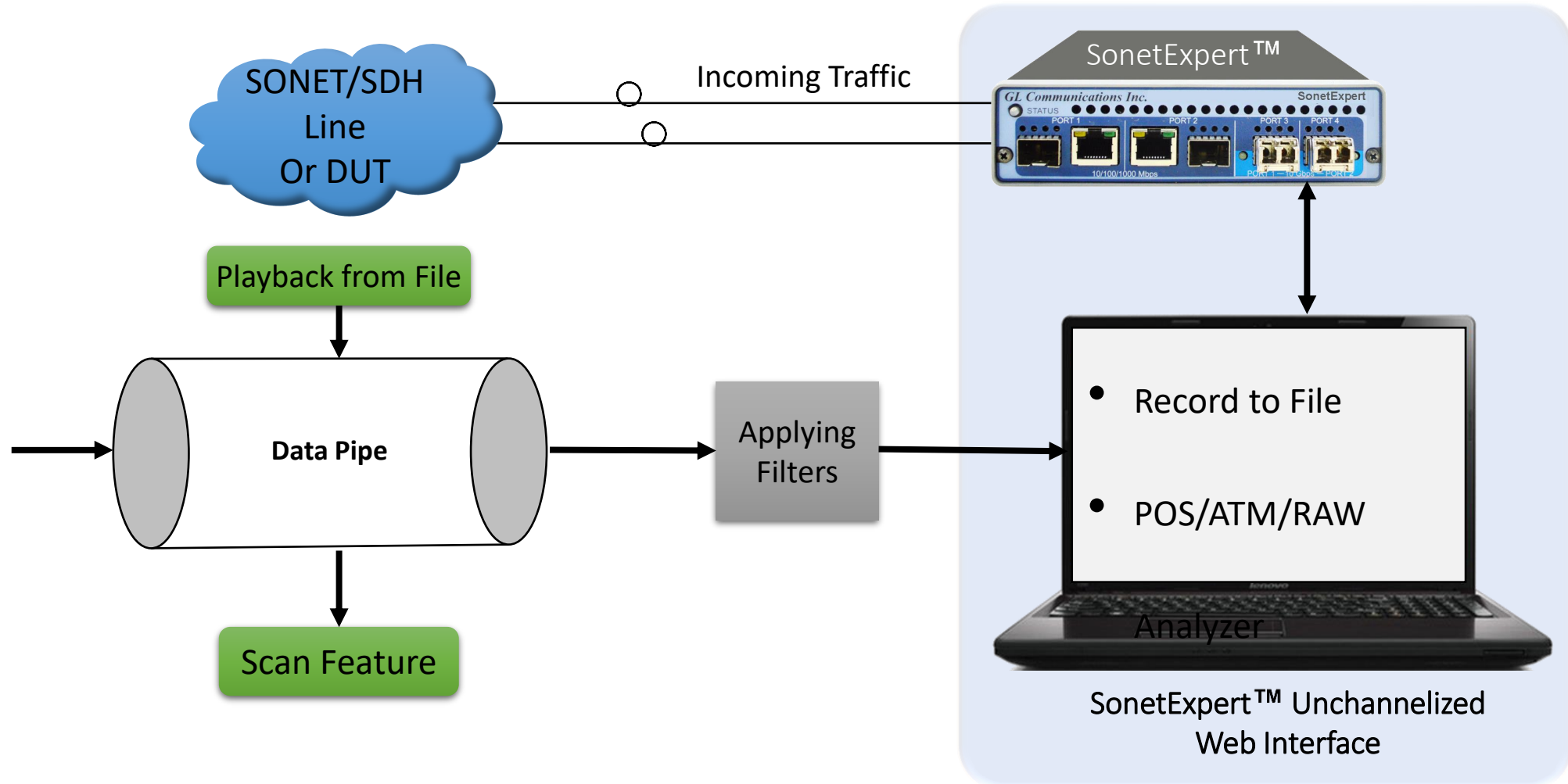
SFP Interface (Contd.)

SonetSDHExpert™ Dashboard Ports Event Log Admin

SFP Info

Name	Value
Wavelength	1310 nm
Module Identifier	SFP/SFP+
Connector Type	LC
Vendor Name	AVAGO
Vendor Part Number	AFCT-5755TPZ
Vendor Revision Number	0000
Vendor Serial Number	AC1025V0012
Vendor Date Code	06/23/2010
SONET Compliance	OC-12, single mode, intermediate reach
10G Ethernet Compliance	Unspecified
Ethernet Compliance	Unspecified
Fibre Channel Link Length	Unspecified
Fibre Channel Technology	Unspecified
Fibre Channel Transmission Media	Unspecified
Fibre Channel Speed	Unspecified
Encoding	SONET Scrambled
Nominal Bit Rate (Signaling Rate)	600 Mbits/sec
Supported Single-Mode Link Length (Km)	15 Km
Supported Single-Mode Link Length (m)	15000 m
Supported Multi-Mode (50 micron, OM2) Link Length (m)	Unspecified
Supported Multi-Mode (62.5 micron, OM1) Link Length (m)	Unspecified
Supported Multi-Mode (50 micron, OM4) Link Length (m)	Unspecified

Data Pipe Working Principle



Record to File Application

SonetSDHExpert™ Dashboard Ports Application Event Log Admin

Record To File

#	Tasks		
1	Recorder1		
2	Recorder2		

Configuration Summary

Select Record Type: ATM DATAPIPE **STOP**

Select Ports

Port Name	Port ID	Active Filter	
<input checked="" type="checkbox"/> Port1	0	0	
<input type="checkbox"/> Port2	1	0	

Select File: OC12_ATM_P1.hdl

Capture Size: 00:05:00 Time

Split Recording

Status

Name	Value
Status	Running
Running Time	00:03:19
Progress	00:03:19/00:05:00 hh:mm:ss (66.34%)
Failure Reason	

Statistics

Name	Value
Disk Write Bytes/Sec	24,375,461
Disk Write Buffer Utilization	0
Packets Received	70,341,890
File Bytes Written	4,853,590,548

Split Recording

The screenshot displays the SonetSDHExpert™ software interface. The top navigation bar includes Dashboard, Ports, Application, Event Log, and Admin. The main interface is divided into several sections:

- Record To File:** A table listing tasks. Recorder1 is selected.
- Configuration:** Select Record Type is set to ATM DATAPIPE. A STOP button is visible.
- Select Ports:** Port1 and Port2 are selected.
- Select File:** OC3_ATM_Port1_Port2.hdl is selected. Capture Size is 00:05:00.
- Split Recording:** This section is highlighted with a red box and contains:
 - File Names:** Split Recording is enabled. Options include Sequential, Date Time Formatted (selected), and a dropdown menu set to mm_dd_yy_hr_min_sec.
 - Split Limit:** Options include Size MBytes (selected), Time, and Frames. The limit is set to 1024.
- Status:** Shows the recording is Running. Progress is 00:03:00/00:05:00 (60.00%).
- Statistics:** Shows Disk Write Bytes/Sec (17,049,803), Disk Write Buffer Utilization (0), Packets Received (126,999,572), and File Bytes Written (8,762,970,468).

A file explorer window is overlaid on the left, showing a directory of HDL files. The file OC3_ATM_Port1_Port2_03_18_24_11_04_39.hdl is highlighted with a red box, and a blue arrow points from this file to the Date Time Formatted option in the Split Recording configuration.

Name	Size
OC3_ATM_Port1_Port2_03_18_24_11_04_39.hdl	2,80,260 KB
OC3_ATM_Port1_Port2_03_18_24_11_04_18.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_03_57.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_03_35.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_03_15.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_02_53.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_02_33.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_02_12.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_01_51.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_01_30.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_01_08.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_00_48.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_00_27.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_11_00_05.hdl	10,00,001 KB
OC3_ATM_Port1_Port2_03_18_24_10_59_44.hdl	10,00,001 KB

Hardware Filtering for ATM

The screenshot displays the SonetSDHExpert™ web interface for configuring hardware filtering on an ATM port. The top navigation bar includes 'Dashboard', 'Ports', 'Application', 'Event Log', and 'Admin'. The current page is 'Ports', showing 'Port2 (OC12 - ATM DATAPIPE)'. A 'Laser ON' button and a 'Reset' button are visible. The main configuration area is titled 'Configuration' and contains two tabs: 'Filter Configuration' (active) and 'Status'. An 'Enable Filtering' toggle is turned on. On the left, a 'FILTERS' table lists one filter: 'Filter1'. The main configuration panel includes a 'User/Network Interface' section with radio buttons for 'UNI' (selected) and 'NNI'. Below this are five input fields, each with a value and an 'Any' checkbox: 'Generic Flow Control' (1), 'Virtual Path Identifier' (100), 'Virtual Channel Identifier' (200), 'Payload Type' (5), and 'Cell Loss Priority' (1). An 'Apply' button is located at the bottom right of the configuration panel.

Configuration

Filter Configuration | Status

Enable Filtering

#	FILTERS
1	Filter1

User/Network Interface UNI NNI

Generic Flow Control: 1 Any

Virtual Path Identifier: 100 Any

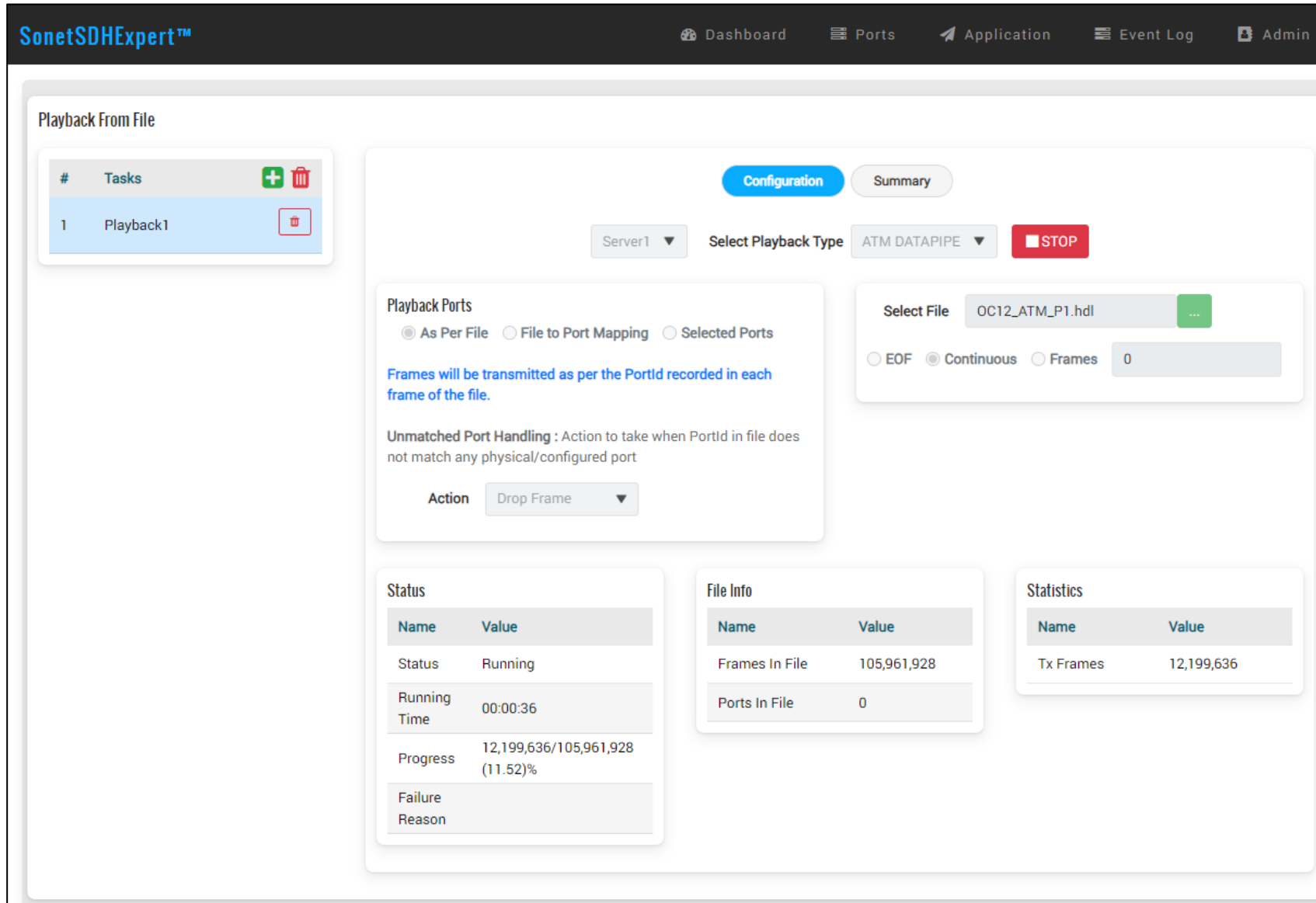
Virtual Channel Identifier: 200 Any

Payload Type: 5 Any

Cell Loss Priority: 1 Any

Apply

Playback from File Application



SonetSDHExpert™ Dashboard Ports Application Event Log Admin

Playback From File

#	Tasks	
1	Playback1	

Configuration Summary

Server1 Select Playback Type ATM DATAPIPE **STOP**

Playback Ports

As Per File File to Port Mapping Selected Ports

Frames will be transmitted as per the PortId recorded in each frame of the file.

Unmatched Port Handling : Action to take when PortId in file does not match any physical/configured port

Action Drop Frame

Select File OC12_ATM_P1.hdl

EOF Continuous Frames 0

Status

Name	Value
Status	Running
Running Time	00:00:36
Progress	12,199,636/105,961,928 (11.52)%
Failure Reason	

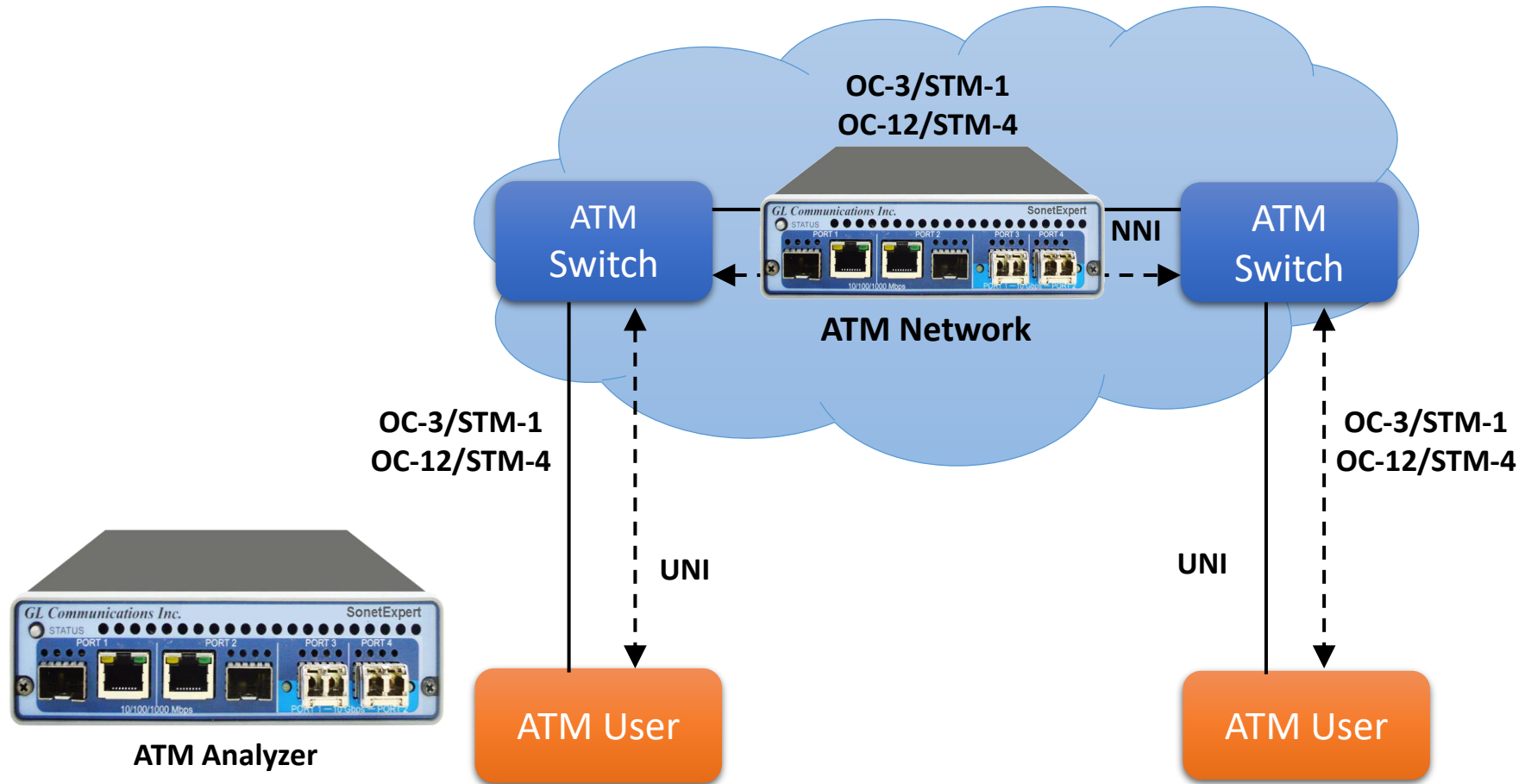
File Info

Name	Value
Frames In File	105,961,928
Ports In File	0

Statistics

Name	Value
Tx Frames	12,199,636

ATM Analyzer



ATM Analyzer (Contd.)

ATM Protocol Analysis AAL2,5(UNI3.1) 64-bit

File View Capture Statistics Database Call Detail Records Configure Help

0 GoTo

Dev	TScout	Frame#	TIME (Relative)	Len	Error	Frame Type ATM	VCI ATM	VPI ATM	PT ATM	PID Multi Protocol Encapsulation	Ether Type Multi Protocol Encapsulation
✓ 0	0	41207570	00:00:29.166894306	52		ATM-Cell	200	356	1		
✓ 0	0	41207571	00:00:29.166895026	52		ATM-Cell	200	356	1		
✓ 0	0	41207572	00:00:29.166895746	52		ATM-Cell	200	356	1		
✓ 0	0	41207573	00:00:29.166896364	52		ATM-Cell	200	356	1		
✓ 0	0	41207574	00:00:29.166897594	52		ATM-Cell	200	356	1		
✓ 0	0	41207575	00:00:29.166898320	52		ATM-Cell	200	356	1		
✓ 0	0	41207576	00:00:29.166898932	52		ATM-Cell	200	356	1		
✓ 0	0	41207577	00:00:29.166899652	52		ATM-Cell	200	356	1		
✓ 0	0	41207578	00:00:29.166900270	52		ATM-Cell	200	356	1		
✓ 0	0	41207579	00:00:29.166900990	52		ATM-Cell	200	356	1		

Device0 TScout=0 Frame=41207570 at 00:00:29.166894306 OK Len=52 *** Right click to SHOW/HIDE layer details or copy *

ATM Frame Data

```

===== ATM Layer =====
0000 VPI          = 356 (00010110 0100....)
0001 VCI          = 200 (...0000 00001100 1000....)
0003 PT          = ....001. (1)
0003 CLP         = .....1 (1)
0004 HEC         = 00000110 (6)
  
```

Hex Dump of the Frame Data

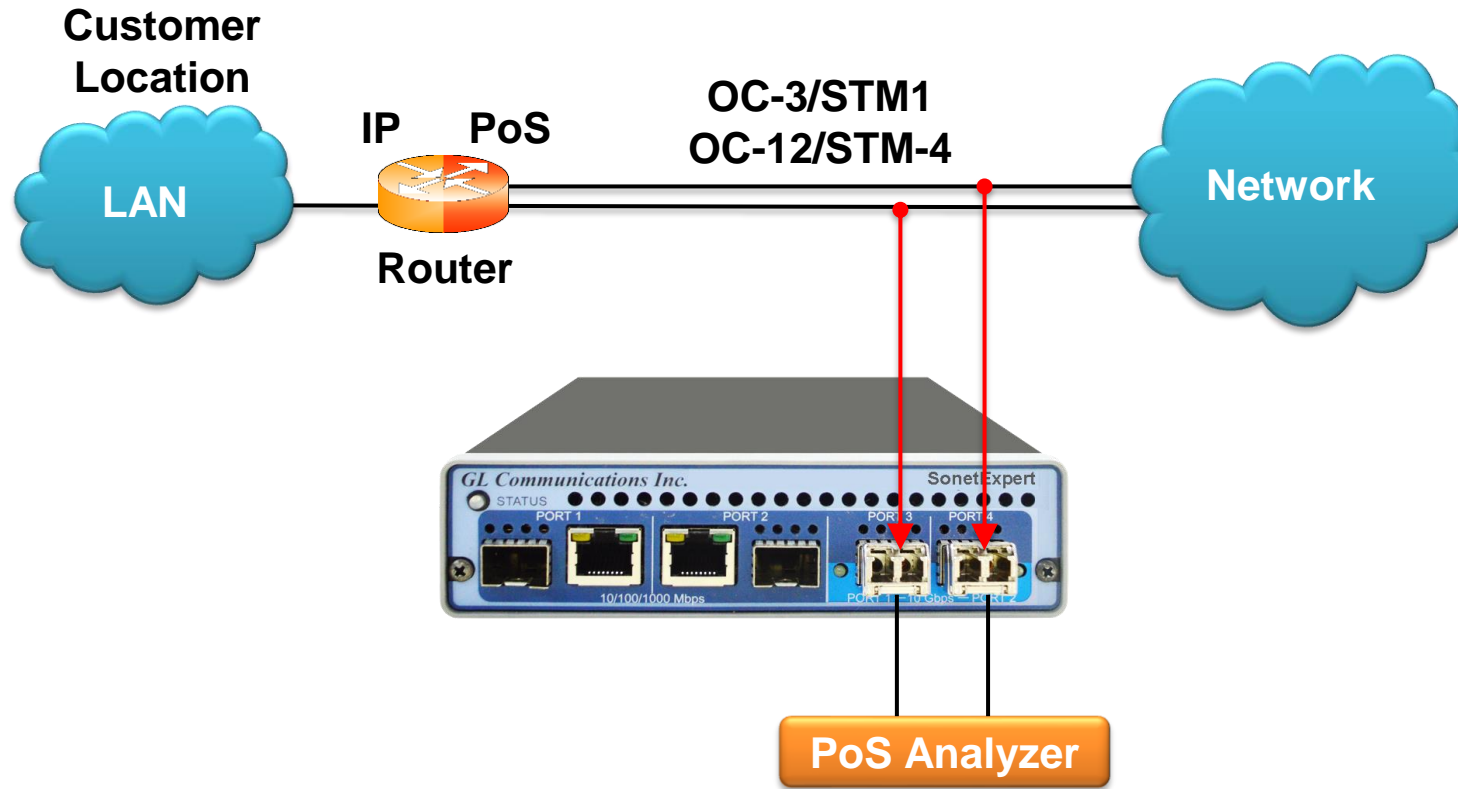
```

+-----+-----+-----+-----+-----+-----+
16 40 0C 83 06 F7 44 5B 9D 65 32 F1 13 66 B5 0C   @ | ÷D[e2ñ fµ
EF 59 C5 28 D4 D0 27 23 1B 5D C3 88 7C 98 40 68   iYÁ(ÔÐ'# ]Ã|||@h
CF 4B 79 A2 95 DE 96 93 89 AB BB E0 76 13 36 38   İKy¢|p|lll<>àv 68
72 EA F0 08                                       rëë
  
```

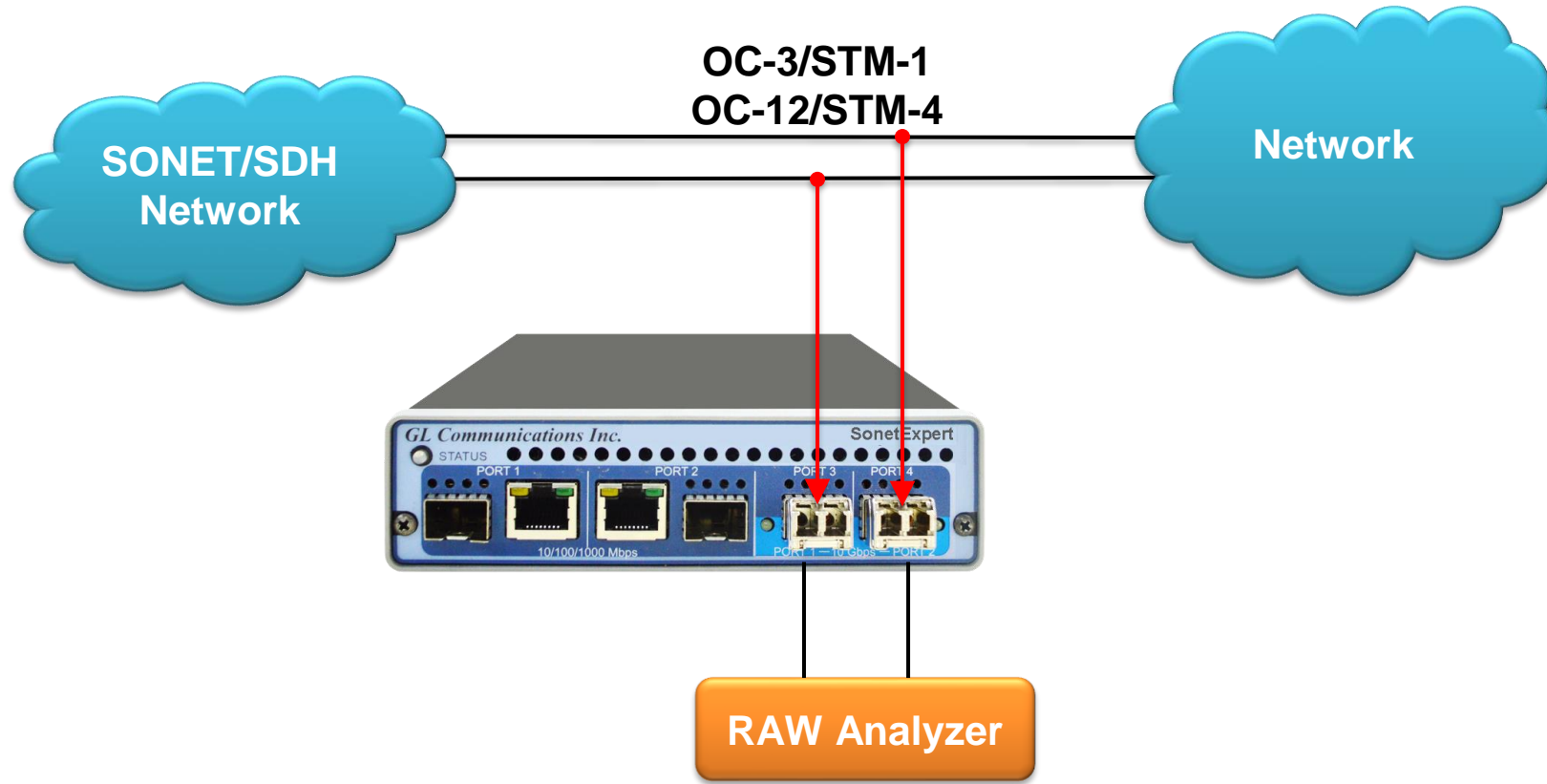
Running. Utilization 0.00% C:\Program Files\GL Communications Inc\SonetEx Captured 43 136 796 frames



PoS Analyzer

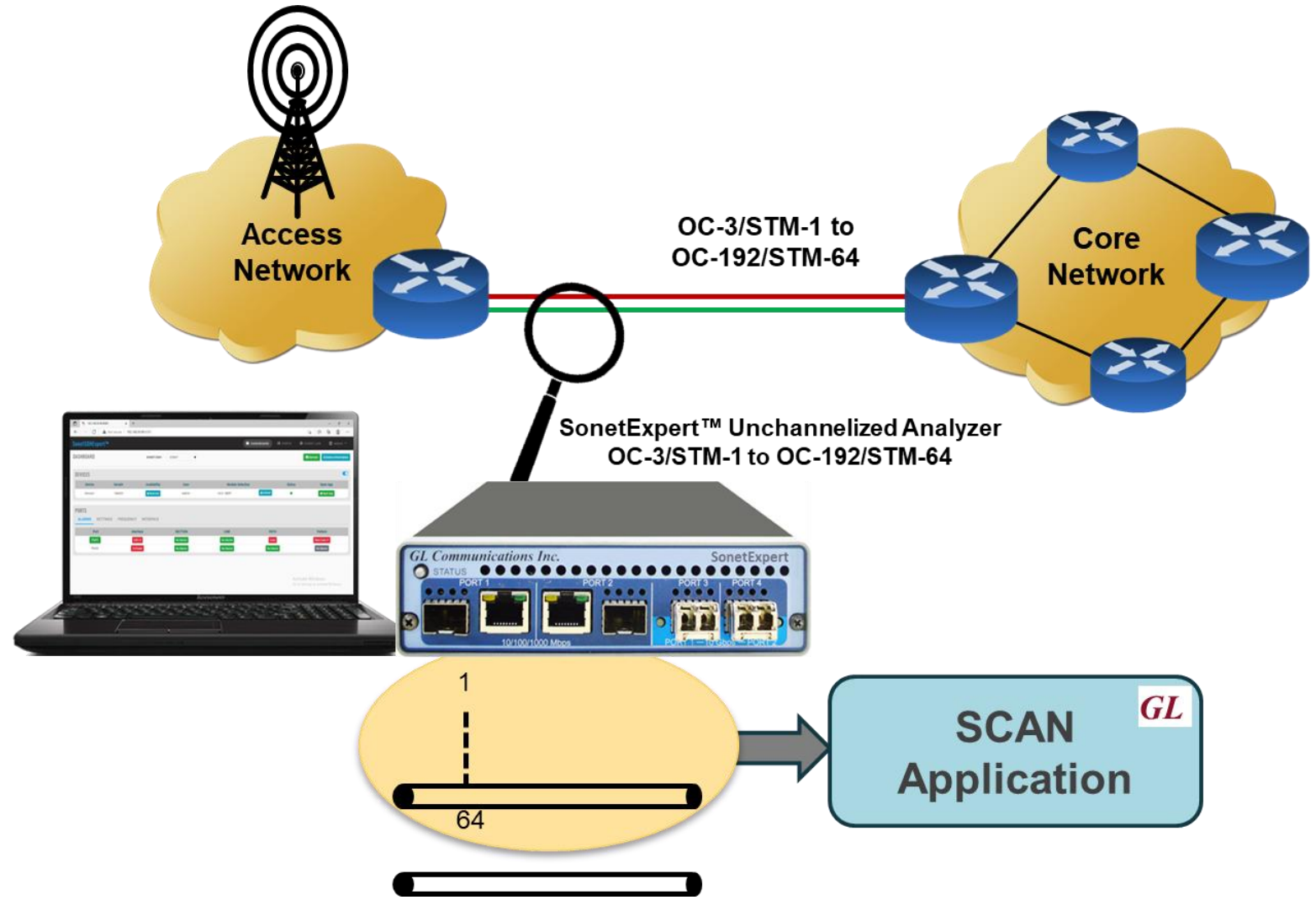


RAW Analyzer



SCAN Application

- Scans the incoming traffic on SONET/SDH interfaces, identifies and displays the traffic structure
- Supported on OC-3/STM-1, OC-12/STM-4, OC-48/STM-16 and OC-192/STM-64 rates
- Traffic structure up to STS-3c is identified and displayed in the main display, with different colors clearly indicating equipped or unequipped channels
- Provides complete overview of the incoming SONET/SDH traffic in an easy and intuitive graphical display and helps technicians to quickly identify the structure of unknown SONET/SDH traffic
- User selectable **SONET** or **SDH** terminology supported on both the ports independently



SCAN Application – SONENT

OC-192 with Substructure

SonetSDHExpert™ Dashboard Ports Application Event Log Admin

OC192 #1

OC48 #1 OC48 #2 OC48 #3 OC48 #4

OC12 #1_1

OC3 #1_1_1	STS-1 #1	Unequipped
	STS-1 #2	Unequipped
	STS-1 #3	Unequipped
OC3 #1_1_2	STS-1 #4	Unequipped
	STS-1 #5	Unequipped
	STS-1 #6	Unequipped
OC3 #1_1_3	STS-1 #7	Unequipped
	STS-1 #8	Unequipped
	STS-1 #9	Unequipped
OC3 #1_1_4	STS-1 #10	OC3->STS-1->VT1.5 >>> FLOAT VT MODE
	STS-1 #11	Unequipped
	STS-1 #12	Unequipped

OC12 #1_2

OC3 #1_2_5	STS-1 #13	Unequipped
	STS-1 #14	Unequipped
	STS-1 #15	Unequipped
OC3 #1_2_6	STS-1 #16	Unequipped
	STS-1 #17	Unequipped
	STS-1 #18	Unequipped
OC3 #1_2_7	STS-1 #19	Unequipped
	STS-1 #20	Unequipped
	STS-1 #21	Unequipped
OC3 #1_2_8	STS-1 #22	Unequipped
	STS-1 #23	Unequipped
	STS-1 #24	Unequipped

OC12 #1_3

OC3 #1_3_9	STS-1 #25	Unequipped
	STS-1 #26	Unequipped
	STS-1 #27	Unequipped
OC3 #1_3_10	STS-1 #28	Unequipped
	STS-1 #29	Unequipped
	STS-1 #30	Unequipped
OC3 #1_3_11	STS-1 #31	Unequipped
	STS-1 #32	Unequipped
	STS-1 #33	Unequipped
OC3 #1_3_12	STS-1 #34	Unequipped
	STS-1 #35	Unequipped
	STS-1 #36	Unequipped

OC12 #1_4

OC3 #1_4_13	STS-1 #37	Unequipped
	STS-1 #38	Unequipped
	STS-1 #39	Unequipped
OC3 #1_4_14	STS-1 #40	Unequipped
	STS-1 #41	Unequipped
	STS-1 #42	Unequipped
OC3 #1_4_15	STS-1 #43	Unequipped
	STS-1 #44	Unequipped
	STS-1 #45	Unequipped
OC3 #1_4_16	STS-1 #46	Unequipped
	STS-1 #47	Unequipped
	STS-1 #48	Unequipped

Equipped

STS-1 #10

VT1_5 #10_1_1	VT1_5 #10_1_2	VT1_5 #10_1_3	VT1_5 #10_1_4
VT1_5 #10_2_1	VT1_5 #10_2_2	VT1_5 #10_2_3	VT1_5 #10_2_4
VT1_5 #10_3_1	VT1_5 #10_3_2	VT1_5 #10_3_3	VT1_5 #10_3_4
VT1_5 #10_4_1	VT1_5 #10_4_2	VT1_5 #10_4_3	VT1_5 #10_4_4
VT1_5 #10_5_1	VT1_5 #10_5_2	VT1_5 #10_5_3	VT1_5 #10_5_4
VT1_5 #10_6_1	VT1_5 #10_6_2	VT1_5 #10_6_3	VT1_5 #10_6_4
VT1_5 #10_7_1	VT1_5 #10_7_2	VT1_5 #10_7_3	VT1_5 #10_7_4

SCAN Application - SDH

STM-64 with Substructure

SonetSDHExpert™ Dashboard Ports Application Event Log Admin

STM64 #1

STM16 #1 **STM16 #2** STM16 #3 STM16 #4

STM4 #1_1

STM1 #1_1_1	VC3 #1	Unequipped
	VC3 #2	Unequipped
	VC3 #3	Unequipped
STM1 #1_1_2	VC3 #4	Unequipped
	VC3 #5	Unequipped
	VC3 #6	Unequipped
STM1 #1_1_3	VC3 #7	Unequipped
	VC3 #8	Unequipped
	VC3 #9	Unequipped
STM1 #1_1_4	VC3 #10	STM1->AUG1->AU3->VC3->TUG2->TU11 >>> FLOAT VT MODE
	VC3 #11	Unequipped
	VC3 #12	Unequipped

STM4 #1_2

STM1 #1_2_5	VC3 #13	Unequipped
	VC3 #14	Unequipped
	VC3 #15	Unequipped
STM1 #1_2_6	VC3 #16	Unequipped
	VC3 #17	Unequipped
	VC3 #18	Unequipped
STM1 #1_2_7	VC3 #19	Unequipped
	VC3 #20	Unequipped
	VC3 #21	Unequipped
STM1 #1_2_8	VC3 #22	Unequipped
	VC3 #23	Unequipped
	VC3 #24	Unequipped

STM4 #1_3

STM1 #1_3_9	VC3 #25	Unequipped
	VC3 #26	Unequipped
	VC3 #27	Unequipped
STM1 #1_3_10	VC3 #28	Unequipped
	VC3 #29	Unequipped
	VC3 #30	Unequipped
STM1 #1_3_11	VC3 #31	Unequipped
	VC3 #32	Unequipped
	VC3 #33	Unequipped
STM1 #1_3_12	VC3 #34	Unequipped
	VC3 #35	Unequipped
	VC3 #36	Unequipped

STM4 #1_4

STM1 #1_4_13	VC3 #37	Unequipped
	VC3 #38	Unequipped
	VC3 #39	Unequipped
STM1 #1_4_14	VC3 #40	Unequipped
	VC3 #41	Unequipped
	VC3 #42	Unequipped
STM1 #1_4_15	VC3 #43	Unequipped
	VC3 #44	Unequipped
	VC3 #45	Unequipped
STM1 #1_4_16	VC3 #46	Unequipped
	VC3 #47	Unequipped
	VC3 #48	Unequipped

Equipped

VC3 #10	C11 #10_1_1	C11 #10_1_2	C11 #10_1_3	C11 #10_1_4
	C11 #10_2_1	C11 #10_2_2	C11 #10_2_3	C11 #10_2_4
	C11 #10_3_1	C11 #10_3_2	C11 #10_3_3	C11 #10_3_4
	C11 #10_4_1	C11 #10_4_2	C11 #10_4_3	C11 #10_4_4
	C11 #10_5_1	C11 #10_5_2	C11 #10_5_3	C11 #10_5_4
	C11 #10_6_1	C11 #10_6_2	C11 #10_6_3	C11 #10_6_4
	C11 #10_7_1	C11 #10_7_2	C11 #10_7_3	C11 #10_7_4

Multiuser Support

Users [Close]

User Name: Password: [+ Add User](#)

Name	Role	Password	Delete
Admin	<input checked="" type="checkbox"/>	Edit Delete
User1	<input checked="" type="checkbox"/>	Edit Delete
User2	<input checked="" type="checkbox"/>	Edit Delete

Devices [Toggle]

Device	Serial#	Availability	User	Module Selection	Status	Open App
Device1	188399	Reserved	User1	OC12 - ATM DATAPIPE Unload	●	

Ports [Reset All](#) All Ports Laser [ON](#) [OFF](#)

[Alarms](#) [Settings](#) [Frequency](#) [Interface](#)

Port	Laser	Interface	SECTION	LINE	PATH	Pattern
Port1	Laser ON	No Alarms	No Alarms	No Alarms	No Alarms	No Alarms
Port2	Laser ON	No Alarms	No Alarms	No Alarms	No Alarms	No Alarms

Thank you