



# Powerful Diagnostics for Data, Voice and Video on your DOCSIS and Fiber Network

Save Money, Time and Subscriber Goodwill with TruVizion Diagnostics

TruVizion is a centralized diagnostics and service activation platform that works with multiple Fiber and DOCSIS vendor solutions, all accessed from a single, intuitive interface. TruVizion is perfect for broadband operators who are managing both Fiber and DOCSIS technologies, and for those deploying multiple fiber platforms who want a single interface rather than having to access multiple vendor-specific applications.

TruVizion provides comprehensive diagnostics data on the health of your broadband network and CPE. Aggregated data from OLTs and CMTSs, along with individual performance metrics from ONTs and cable modems, provide a full picture of any issues and those that should be addressed first.



## A Single Pane of Glass

TruVizion consolidates key metrics you need to keep watch on your equipment and network. You don't have to access multiple applications or drill through endless screens to find the information you need. TruVizion's unified interface will increase the efficiency of your Network and Customer Care teams, while lowering your operational costs. TruVizion's cross-platform support will provide an even greater boost to your operational efficiency.



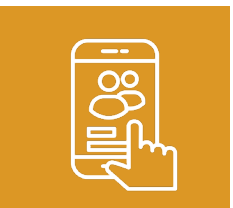
## Reduce the Costs of Call Center Operations

TruVizion quickly gives your support staff the information they need. Easy-to-use screens help locate the issue quickly, and the number of customers affected. Determine if a problem is limited to a customer's home, or in the network affecting other customers.



## Recover from Outages Faster

TruVizion provides decisive information to multiple departments about the severity, type and location of a problem as it happens, and historical data helps track down intermittent problems that are so hard to find. See the past 24 hours to 90 days, or stream data live to check if repairs have been effective. With a click, display a map of all subscriber devices, which are color coded to indicate their status and any alert levels.



## Useful and User Friendly

TruVizion's patented technology and user-friendly interface offers a full-featured diagnostics platform that is highly intuitive and more powerful than other systems. Employees from your Call Center Reps and Maintenance Technicians, to your NOC Personnel and Engineers, will be able to leverage the information in TruVizion to more quickly and efficiently resolve issues. TruVizion is a web-based application and can also be viewed on a tablet or smartphone.

# Fiber Diagnostics

## OLT Diagnostics Screen



1

### DS and US Port Statistics

See which downstream and upstream ports are experiencing the most issues for receive and transmit levels, and those with the most alerts for data, video and voice. Click to list those devices with issues.

2

### PON and Online Status

View the temperature and transmit power of the laser from the Fiber SFP on the GPON OLT Port. See the device status for each PON port (online, offline, attempting, degraded and unauthorized).

3

### Bandwidth Utilization

See bandwidth use for each PON port by total amount and percent of usage. Click to see a report of each subscriber's upstream and downstream usage (current and the last 24 hours).

4

### PON Performance

See a summary of BIP, GEM, HEC and Burst errors, which can indicate the fiber health (dirty fiber, kinks or bends). Drill in to see a list of subscribers experiencing issues due to connectivity problems.

## ONT Diagnostics Screen



1

### ONT Device Panel

View optical levels, errors (BIP, GEM, Burst) and any alarms for the ONT, color coded by alert level. Click to graph this data over time.

2

### Data Port Panel

View status and performance metrics for all data ports, including: Upload and Download Transfer, Errors, and Packet Transfer. Click to plot the data over time (24 Hours to 90 Days).

3

### Voice and Video Ports

See details on your provisioned voice and video ports, including alerts for SIP registration errors, video port outages, and optical signal issues on the return path.

4

### Customer Information

View customer information, account #, and a map with devices color coded by alert level. Expand the map and filter devices by Status (online, offline, degraded), and ONT Model.

# DOCSIS Diagnostics

1

## Downstream and Upstream RF Levels

See which downstream and upstream channels are experiencing the most issues for receive and transmit levels, and SNR. Click a number to drill-in to see a list of subscribers experiencing those issues.

2

## Average Upstream SNR

View the average upstream SNR for each channel. The worst channels are shown first, and the bars are color coded to indicate channels that have the most to least issues (red, yellow and green).

3

## Bandwidth Utilization

See bandwidth use for each channel by total amount and percent of usage. Click to see a report of each subscriber's upstream and downstream usage (current and the last 24 hours).

4

## Modem Status by Channel and Port

See a count of the modems on the CMTS that are Offline, Online, Attempting and in a Partial state by both Channel and Node by value and percent. Click a number in the table to see those subscribers.

5

## Codeword Errors

View codeword errors, with the channels that have the most codeword errors appearing first. Switch between correctable and uncorrectable. Click a bar to see a list of the impacted subscribers.

## CMTS Diagnostics Screen



## Cable Modem Diagnostics Screen

1

## Cable Modem Device Panel

See the model, MAC Address, IP Address and Firmware version of the device. See the connected CPE devices, and their IP address and status.

2

## Modem Status and Communications

View registration status and date/time, total flaps, last flap, and total times online in the last 24 hours. See the assigned package name and speed, service flows, and US and DS data transmitted in 24 hours.

3

## Signal Quality and Modem Port Status

See TX and RX power, SNR, and uncorrectable codewords for each channel. For US channels see offline, ranging and online modems, plus bandwidth, codewords and Avg SNR.

4

## Customer Information

View customer information, account #, and a map with devices color coded by alert level. Expand the map and filter devices by Status (online, offline, alerts), Vendor & model, and node and Active Leg.



# A Wealth of Historical Information Available with One Click

In TruVizion a single click will display historical data for the last 24 hours in chart form. One more click and you can see the last 7 days, 30 days or 90 days. You can also click to see the data as it streams in live.

## OLT History



Click any PON Port label to see a chart that displays the Upstream and Downstream Transmit and Receive Power, Upstream and Downstream Bandwidth Utilization, Laser Temperature, OLT Status, and PON Performance.

## ONT History



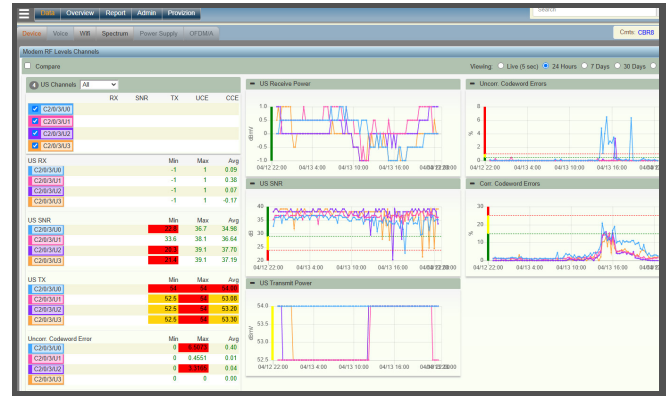
Click a drill-in icon on the Data Port Panel on the ONT screen to see a chart that displays the Downstream and Upstream Throughput, Transmit and Receive Bytes, and the Transmit and Receive Frames.

## CMTS History



Click any Channel label to see a chart that displays the Transmit Power, Receive Power, Average SNR, Bandwidth Utilization, Modem Status, and Correctable and Uncorrectable Codeword Errors.




## Cable Modem History



Click a drill-in icon on the Cable Modem screen to see a chart that displays the Upstream and Downstream Receive Power, SNR, Transmit Power, and Correctable and Uncorrectable Codeword Errors.



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