

OV Spectrum Analyzer: Downstream

Diagnose and Troubleshoot Signal Impairments in Subscribers' Homes

The ability to perform analysis from a cable modem can be a valuable tool for broadband providers to diagnose and troubleshoot signal impairments at the subscriber's home. With this greater visibility and insight into the quality of the signal at the subscriber's home, providers can improve the quality of experience for subscribers, reduce truck rolls, and ultimately save time and money.



Full Band Capture

This function analyzes the entire frequency spectrum of the network in a single pass and in real time to accurately diagnose signal quality issues. Information captured is then analyzed using our specialized software to identify potential issues such as signal noise, distortion, or interference.

BENEFITS

- **Faster diagnosis:** Allows network operators to quickly identify and diagnose signal quality issues and take appropriate corrective action.
- **Minimize downtime** and reduce the need for time-consuming and costly manual testing.
- **More accurate results:** Full band capture can provide more comprehensive results and identify issues that might not be visible using traditional signal testing methods.
- **Improved network performance**

Full band capture is extremely beneficial in cable networks that use high frequency ranges, as these networks can be more susceptible to signal quality issues.

Full Band Capture Correlation

By correlating data from multiple sources, including modems and other network devices, our solution can help operators distinguish between impairments that are caused by issues in the OSP (outside plant) versus those that are caused by in-home issues.

For example, if a group of modems in a particular area are all experiencing the same impairment, OV Spectrum Analyzer: Downstream can identify that the issue is likely caused by an OSP problem, such as a damaged cable or faulty amplifier. On the other hand, if only one or a few modems are experiencing the issue, it may be caused by an in-home issue, such as a faulty splitter or loose connector.

BENEFITS

- Avoid unnecessary truck rolls to address in-home issues that are caused by problems in the OSP.
- Save time and money
- Improve the quality of experience for subscribers

RxMER

RxMER (Received Modulation Error Ratio) per subcarrier analysis is a useful tool for monitoring and analyzing the performance of DOCSIS 3.1 OFDM channels in a cable network. By analyzing the RxMER data we can measure the quality of the signal received by the modem to determine how close the subscriber's modem is to the threshold of each modulation scheme, such as 4096-QAM.

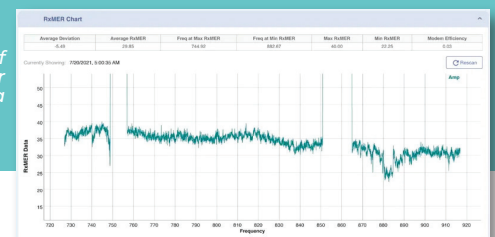
BENEFITS

- Identify potential problems before they impact subscribers
- Enables a technician to identify the root cause of the problem and take proactive measures to prevent service disruptions

RxMER Correlation

- Identify OSP impairments impacting OFDM channels
- Know what subscriber's have in-home vs OSP issues
- Improve OFDM service for many subscribers at once
- Increase OFDM modulation to increase data throughput

Example plot of OFDM RxMER per subcarrier data



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