

Powerful Diagnostics in the Palm of your Hand



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**Powerful, Convenient and Cost-effective
Mobile Diagnostics for Field Technicians**
*Improve productivity for your technicians in the field,
reduce truck rolls and eliminate costly test equipment
with TechVizion.*

It's important to give your technicians the right tools when they head out into the field. Whether tasked with troubleshooting a subscriber issue or bringing up a new customer, having visibility into the modem in question, as well as readings for other homes in the area, can make all the difference in whether a customer is satisfied. Not having the right information means more time spent in the home and wasted miles on the road, when your tech could be moving on to the next job.

You may already provide test equipment to your field personnel. But, meters are bulky and only provide limited information. DOCIS Analyzers, while they provide a lot of useful data, are not only heavy, but they can cost \$5,000 or more and they need to be replaced every few years. Wouldn't it be great if your technicians could carry something that weighs only a few ounces, and is a piece of gear they likely already have with them everywhere they go?

Introducing TechVizion

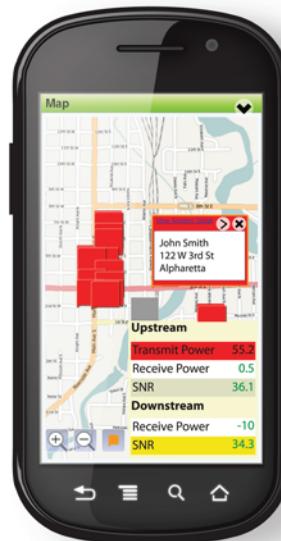
With TechVizion, ZCorum's new mobile app for TruVizion, your staff will have visibility not only into a single subscriber modem, but also nearby modems. Unlike test equipment that can only see what it's connected to, TechVizion makes it fast and easy to verify the quality of a subscriber's connection and even check on other modems in the area—without the bulk and expense of proprietary equipment, and without the need to drive from place to place to connect up. All your techs need is an iPhone or Andriod-based smartphone and the app. TechVizion is also compatible with iPad and Android tablets.

Save Valuable Time and Money

Smaller providers often can't afford expensive test equipment, and without the right tools in hand your techs won't be able to verify readings in the field. Even with proprietary test equipment, their view is limited to current data only, and only on the device they're connected to.

Let's say a customer calls in one afternoon because he's having connection problem. A technician makes a service call the next morning. He checks the modem and everything is working fine. In fact, the service looks great. He looks at the wiring inside and at the NID, which all looks good, so he heads back to the office. Later that day the customer calls in with the same complaint and a tech is dispatched again the next morning.

If he had TechVizion, here's how that situation might play out. The technician sees that the modem is online and working properly. He pulls out his smartphone and looks up the modem to view its readings. The current readings look good, but he sees that there have been several flaps and a high percentage of errors over the last 24 hours. He scrolls down to look at the information on the upstream channel and sees the port has also had an unusual number of errors. Next, he drills in to look at the modem's RF history over the last 24 hours and he sees that the previous afternoon the readings were definitely out-of-spec at the time the customer called. He touches the Compare button to view RF data for other nearby modems, and they also show similar issues at the same time. The tech reports his findings back to the office, and the problem is discovered to be a nearby amplifier that's acting up as temperatures rise each afternoon. Rather than an angry customer, multiple truck rolls and numerous hours to find and resolve the problem, the technician had the diagnostic data in hand to help pinpoint an issue that was affecting multiple subscribers.



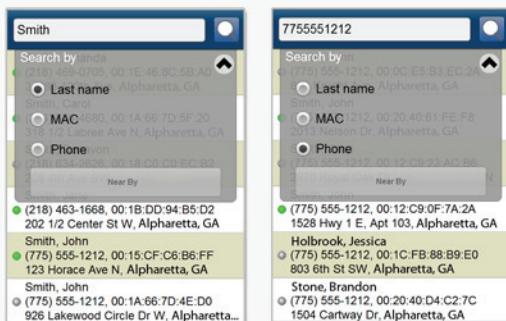
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Here are some of the powerful features your technicians will have access to in TechVizion that will give them the information they need to quickly and efficiently diagnose issues in the field.

Easy Customer Query

Look up any customer modem by MAC address, the subscriber's last name or their phone number. The search result will display the modem you're looking for. Or, if more than one modem matches the search criteria, such as a customer's last name, a summary list of all modems that match will be displayed, showing customer name, address, phone, and whether the modem is in an alert state or off-line.



Historical Data and Comparisons

With one touch you can chart the RF statistics for the modem over the last 24 hours. One touch more will overlay the same data from the five closest modems so you can compare readings and check for common trends or deviations. TechVizion will even stream RF levels to the charts live as you watch, which is useful for confirming whether a problem has been resolved, as well as for identifying intermittent and short-duration issues that might otherwise be missed.



Key Modem, EMTA and Port Statistics

On a single screen see a wealth of information, including the modem's status, how long it's been online, the number of flaps and the last flap time. Scroll down to see the modem's power and SNR levels, the number of codeword errors over the last 24 hours and bandwidth transferred during the same period. You can also see key metrics for the upstream channel the modem is connected to, which is especially helpful in determining if a problem is affecting one subscriber or multiple homes in the area. The Voice tab allows you to view the line status, battery state and the quality scores for the last ten calls.

| Modem | Voice |
|--------------------------------|-------------------|
| Status | |
| Status | Online |
| Since | 09/21/11 - 3:55PM |
| Online Stability | |
| Total Flaps | 168 |
| Time Online | 0 |
| Uptime | 1 day 00:02:24 |
| Last flap time | 07/18/09 - 4:53PM |
| Rf Levels | |
| Upstream | |
| Transmit Power | 52.5 |
| Receive Power | 0 |
| SNR | 20.7 |
| Downstream | |
| Receive Power | 20.9 |
| SNR | 40.1 |
| Service Quality(24 hrs) | |
| Download | 384.4MB |
| Upload | 17.3MB |
| DS Codeword Error% | 0% |
| US Codeword Error% | 0% |
| Port | |
| US Channel | C1/U4.0 |
| Node | N/A |
| Active Leg | N/A |
| Offline Modems | 3 1% |
| Ranging Modems | 0 0% |
| Online Modems | 258 99% |
| Service Quality | |
| US Bandwidth% | 32% |
| DS Bandwidth% | 35% |
| US Codeword Error% | 0.0001% |
| Avg US SNR | 30.3 |

Mapping

With TechVizion, you can generate a map with a single touch that shows all modems on the same channel. Flags representing each modem are color-coded based on RF alerts or offline status for quick identification of trouble areas and outages.

