VIAVI Solutions

Application Note

Certify Cable and Antenna Systems Efficiently and Consistently with TestWizard™

Continuous growth in smartphone subscriptions and data utilization has forced many operators to accelerate the expansion and upgrade of their networks. At the same time, service providers are under tremendous pressure to keep costs in check while maximizing ROI. As one of the key CAPEX drivers for any service provider is the expansion of the RAN infrastructure, it is essential that every cell site, regardless of type (macro, small, Pico, DAS network, etc.), is delivering the best possible service.

Minimizing RF loss at a cell site—by properly certifying all the cables, connectors, and other components—is critical for optimal performance. However, certifying coaxial transmission lines requires highly-skilled technicians to ensure testing is done correctly, consistently, and efficiently. This poses a great challenge for contractors, NEMs, and service providers to make sure resources are properly trained and are able to quickly and accurately run specific test cases and share results in a timely manner.

Deployment Challenge

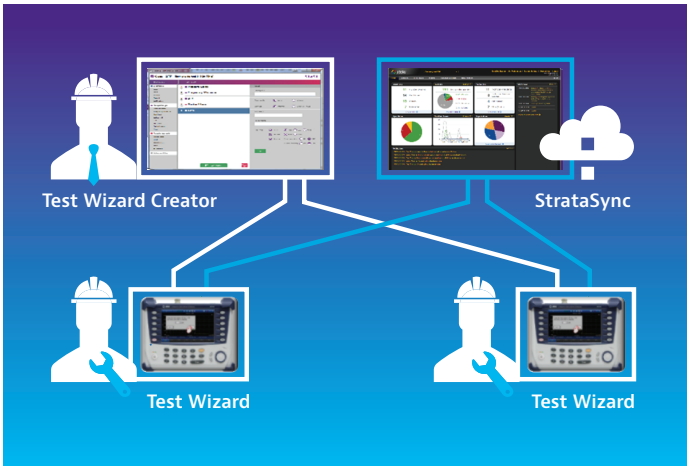
Service providers, NEMs and their contractors continue to struggle to launch new cell sites on time. Contractors frequently have to revisit the site to troubleshoot installation issues, slowing the service launch time for the service provider and impacting end users, and delaying payments for contractors. Certification of cable and antenna systems requires technicians to follow a strict process as outlined in the method of procedure (MOP), and missing any of the steps can result in delays. Some of the challenges faced by the cell-site deployment ecosystem can be summarized as follows:

1. Finding highly trained resources for cell-site verification
2. Ensuring proper cell-site verification process is executed
3. Getting cell sites certified the first time
4. Contractors getting paid on time

Solution

With VIAVI's CellAdvisor Cable and Antenna Analyzer and the TestWizard solution, cell-site technicians can create pre-defined test cases before they go out to

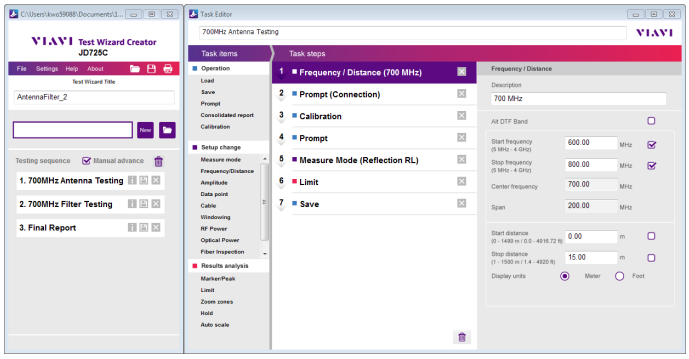
the field. Using a step-by-step wizard-guided test process in the field, junior technicians can execute all the required test cases accurately and consistently.



Why TestWizard

Mobile operators set up MOPs for their contractors and cell technicians performing cell-site installation, acceptance, and maintenance to ensure consistent testing and dependable results. Contractors' technicians must carry paper MOPs in the field and follow them precisely. Unfortunately, resource churn and (in some cases) lack of experience can result in installation that fails the verification phase, causing project delays, increasing project costs, and affecting the contractor's ability to invoice the service provider for their services. And in some cases, contractors have to revisit the cell site, further reducing their project margins.

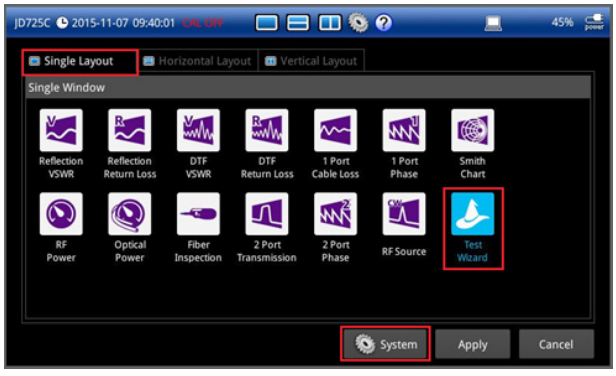
VIAVI has been closely working with service providers in developing a solution that can virtually eliminate the chance for human errors. Using the PC-based TestWizard Creator from VIAVI Solutions®, experienced technicians can create MOPs for different cell-site configurations based on the cell-site design specification, then distribute these MOPs to the field instrument either using the cloud based StrataSync™ solution or by directly loading the wizard file on to CellAdvisor™ cable and antenna analyzer.



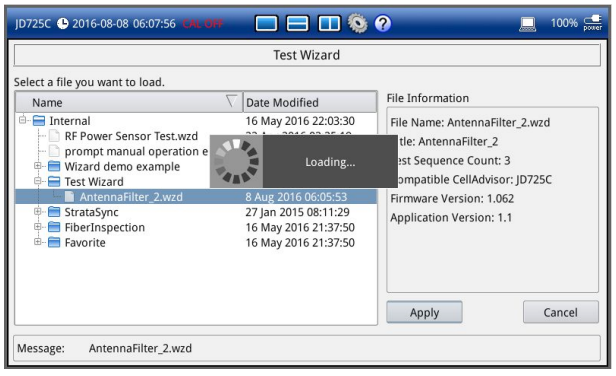
By eliminating the need to manually configure the instrument in the field to perform cable certification tests, TestWizard makes it simple for technicians with less experience to quickly get up to speed. An intuitive graphical user interface lets technicians run complex test cases with ease and confidence—they finish the job on time and get paid quickly.

Using TestWizard

1. Double-click the TestWizard icon on your CellAdvisor Cable and Antenna Analyzer.

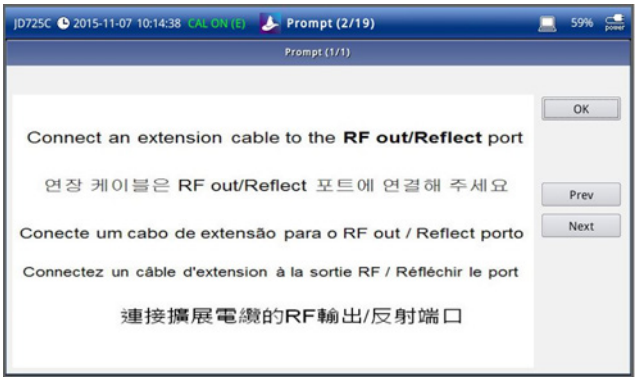


2. Navigate to your TestWizard file, select and apply the selected file.



3. Review and confirm the test list.

4. Tap on start and follow the TestWizard guided procedure.

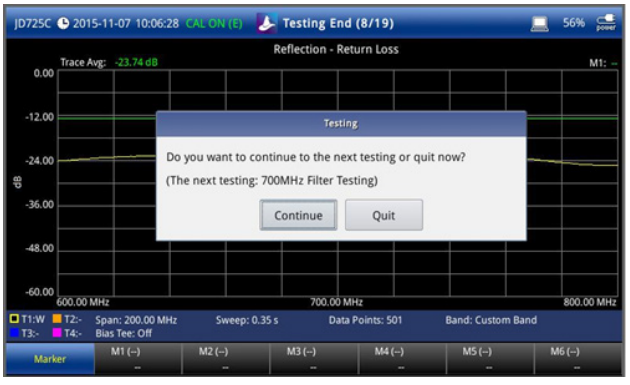


5. Perform electronic calibration using the EZ-Cal kit.

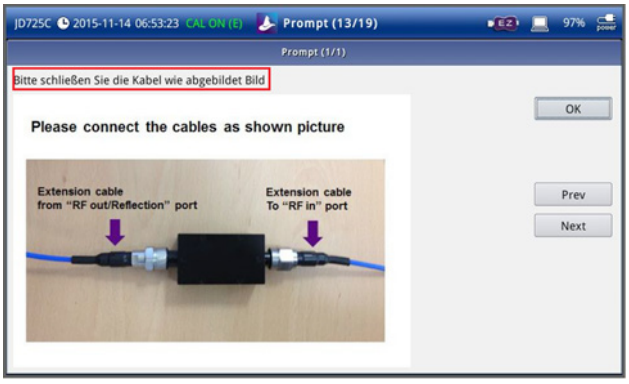
6. Follow the cable connection image as defined in Test Wizard Creator and follow the "next" steps.

7. Once the test is executed, an automatic pass-fail indication is displayed.

8. After saving the current test results, a pop-up window appears, directing the technician to execute the next test case in the queue.



9. Follow the connection image as defined in TestWizard Creator as shown on the screen.



10. As tests get executed automatic pass/fail indication status is displayed.

11. After all the tests in the sequence are executed and the results are saved, a pop-window appears with the message "All testing completed".

Conclusion

By following a step-by-step guide shown on the instrument screen, a cell-site technician can correctly and consistently certify any type of cell-site. Once all the tests are executed results can be shared instantly by connecting the instrument to the StrataSync cloud service or by sending the results back to the service provider. The contractor gets paid faster, and the service provider is confident the site has been properly certified the first time.

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