VIAVI Solutions

Case Study

Using CellAdvisor 5G to Identify the Root Cause of UE Connection Failure

In 5G TF, for user equipment (UE) to send and receive data, it must first connect to the network by acquiring a beam. For that to happen, it needs to understand the beam index. The beam Index comprises antenna information, symbol, subframe, and subframe number (SFN).

5G Customer Challenge

A Tier 1 service provider was struggling to launch a few 5G sites as UEs were not able to connect to the network. Although the RF downlink signal strength was excellent, the UEs continued to fail to connect. The UE vendor and network equipment manufacturer (NEM) could not determine the reason for the failure, and using a traditional field data capture tool with a UE was not an option as the UE connectivity was the main problem. At this point, the service provider reached out to the RF experts at VIAVI for help identifying the root cause.

Solution

Using VIAVI CellAdvisor 5G, we were able to quickly identify the root cause of the failure. As shown in Figure 1, the SFN was not being transmitted by the 5G node B. Armed with this information, the service provider was able share that information with the NEM, and they were able to fix the problem.

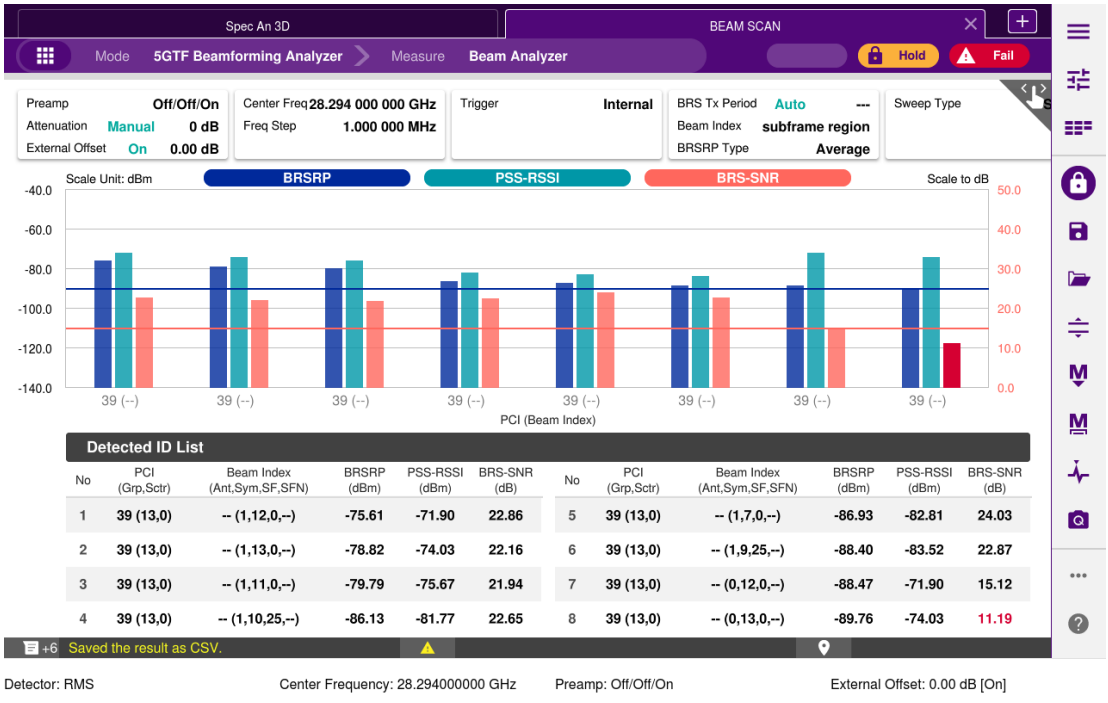

Figure 1: Beam Analyzer function

CellAdvisor 5G is the ideal field portable solution to validate and deploy 5G radio access networks, and allows service providers to perform the following functions:

- 5G carrier scan measuring up to eight wide-band carriers' power as well as strongest beam power level and corresponding identifier (ID)
- 5G beam analyzer assessing individual beam IDs, power level and corresponding signal-to-noise ratios
- 5G route map for coverage verification, mapping in real time the physical cell identity (PCI) and beam strength, as well as making coverage data available for post-processing
- Real-time spectrum and interference analysis with persistence display for 5G FR1 (Sub-6GHz) and FR2 (mmWave)

With CellAdvisor 5G, service providers can test all physical interfaces, whether they are fiber, coax or RF, making it the most comprehensive, easiest-to-use portable test equipment available.

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