

Turning Failure into Success

Not all product demonstrations go as planned. Unforeseen problems can arise, causing the demonstration to go awry. We can either accept this as a failure or use it to create an opportunity.

Recently, we ran into such an issue during a BITE3 demonstration, while visiting a company that provides testing and maintenance for UPS systems. Currently, they use one of our competitor's units.

Unfortunately, on some of the noisier UPS systems they found that the competitor's unit was not operating properly. With that equipment, they were required to turn the UPS off in order to test the batteries. However, a new contract would not allow them to turn off the UPS systems when performing the battery testing. After receiving an inquiry for the BITE3, we went in to perform a demonstration.



They led us to their noisiest and most problematic UPS system – unable to work with any battery tester. To begin, we touched a single lead of the BITE3 to a battery in the UPS and the BITE3 shut off, perplexing us. We turned the BITE3 back on and, again, touched a single lead to a battery, once more causing the BITE3 to shut down. The customer indicated this is what the competitor's unit did on this particular UPS, as well.

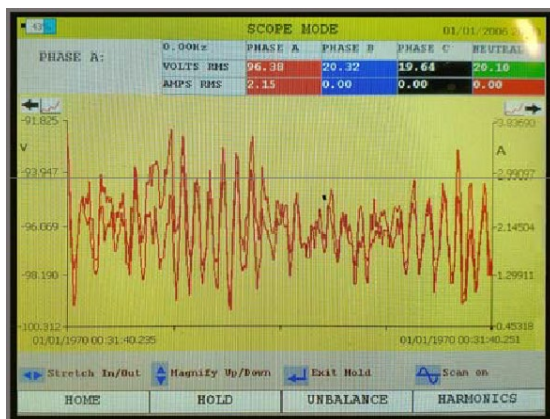
At this point, we brought out an MPQ Analyzer. We connected this across the battery and examined the DC signal.

Using the MPQ, we discovered a very large amount of high frequency AC riding on the battery string, which should not be present. Not only does this hinder testing, but also it can lead to premature battery failure.



This analysis revealed that a section of the UPS was not grounded. Once we grounded the UPS's section, the noise reduced significantly.

Consequently, we were able to perform the on-line testing with the BITE3. We proceeded to test all the UPS systems while on-line, even those that the competition was unable to do.



After performing the test successfully, the customer was impressed by our troubleshooting endeavors and became interested in the MPQ analyzer, as well. They frequently experience Insulated-Gate Bipolar Transistors (IGBT) failures but have been unable to determine the cause. The company asked if they could measure IGBT switching signals using an MPQ. Subsequently, we connected the MPQ and demonstrated that yes, in fact, we can indeed measure the IGBT switching.

The customer was able to change the load and see how the IGBT switching changed as a result.

Since this can be done with an oscilloscope, as well, the following question often arises – why should you use an MPQ analyzer? The MPQ analyzer has the unique ability to capture waveforms using a time trigger, which is extremely valuable to this customer. By keeping an MPQ analyzer connected for extended periods of time, they can capture the IGBT switching signal throughout the recording interval. Plus, the MPQ can do this while recording everything else. No competitor's unit does this. This feature is similar to leaving an oscilloscope connected for extended periods of time.



When we first arrived at the customer's facility, the BITE3 could not measure their noisiest UPS systems. At this point, the demonstration could have ended. However, by taking the time to use the MPQ analyzer to perform some necessary troubleshooting, we found their problem and successfully demonstrated the BITE3. Moreover, we walked out of the plant with an RFQ for both the BITE3 and the MPQ analyzer.

When testing does not go as planned, it is natural to automatically blame the instrument. It leaves a poor perception in the client's mind, leading to a failed demonstration. When we do not get the results we expect, it is imperative to troubleshoot to find the cause. If you solve a problem using Megger equipment, you show the unequivocal value of that equipment and potentially more