



ART-3D[™] Automatic Ratio meter Enhanced Anti-Induction mode

Ratio measurement of bushing type current transformers on Single Phase shunt reactors, at the Jacques-Cartier Transmission 765kV substation (Quebec, Canada) where required in the spring of 2014. The ratio of these CT's was 4000 :1. Great efforts where invested into the enhancement of our anti-induction algorithms on the ART-3DTM to overcome the challenges of accurately measuring the test signals which are often buried under large induced signals from nearby power lines. The large ratio combined with the high voltage lines takes full advantage of this enhanced anti-induction mode. Advanced denoising processing is also a key element of the performance focus.



We have measured the signals with the basic anti-induction filtering:

 The test signals required for the accurate ratio measurements are buried in the noise and harmonics. The ratio levels measured in this environment are found to be above acceptance threshold. The results were found to fluctuate near 20% error.



ART-3D™ Automatic Ratiometer

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Advanced and Innovative Solutions

• For the development work, we have pushed this challenge and added very heavy THD and static components to the original noisy signal. The resulting signal is very distorted. Even with these very harsh measurement environments, the enhanced Anti-induction mode of the ART-3D[™] is capable of extracting the test signals and run automatic test sequence.



Resulting signals after the ART-3D[™] enhanced anti-induction mode has been processed. We measured a ratio error of 0.027% (3998.9:1)



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