Electrical grid characterisation as a PLC channel

How much your electrical grid is able to support powerline communications?

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Founding Member of G3-PLC Alliance

Service overview

Using the existing electrical grid infrastructures as a communication channel for smart city / country projects is for sure a real opportunity for a fast and affordable deployment.

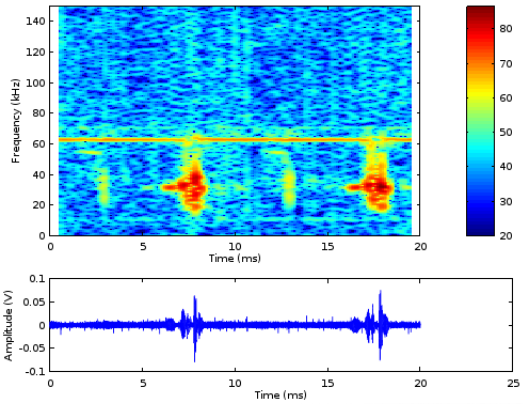
But how to be sure that the grid will support powerline communication?

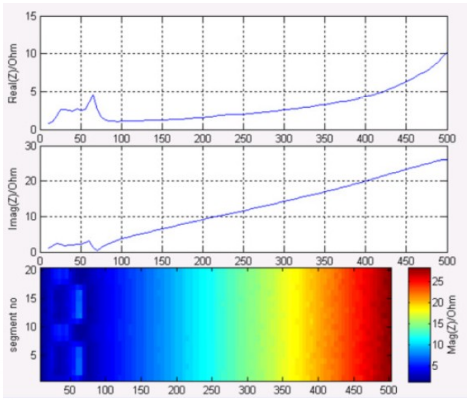
TRIALOG, a worldwide leading company for Power Line Communication (PLC) is now able to provide you an innovative solution to highlight where and how much the grid may support PLC to know exactly where you go.

Detailed work

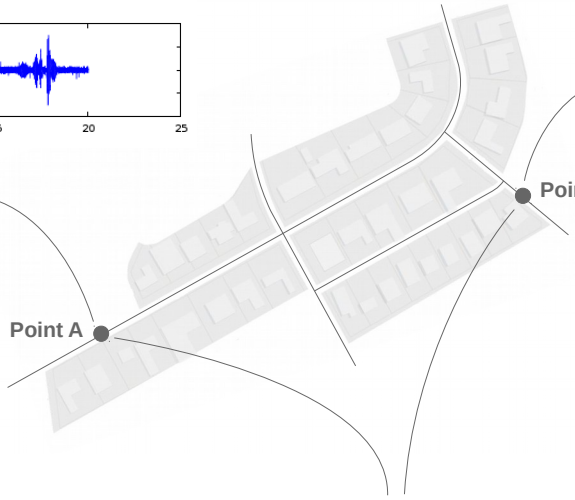
Based on a three decades experience on PLC researches, *TRIALOG* has engineered and released a powerful field tool allowing to automatically evaluate the ability of an electrical grid to support PLC.

This tool performs fundamental electrical measurements such as complex access impedance, noise spectrogram and channel transfer function between two points of the electrical grid up to 3 phases simultaneously.

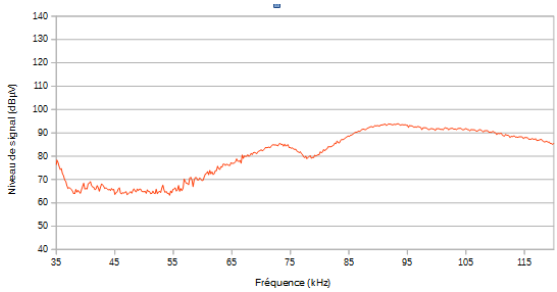




Noise
The noise is measured at one point, including its time and frequency variation. Several noises are usually captured : background noise, narrow-band noise and impulsive noise.



Acces impedance
The access impedance is measured at one point. Both real and imaginary parts are measured for every frequency in the range of interest to finally obtain the complex impedance.
In addition, the time variation may also be studied with zero-crossing synchronisation to detect short cyclic impedance drops.



Channel transfer function
The channel transfer function is measured between two points, in both directions. It shows the attenuation of the channel for every frequency in the range of interest.

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An easy device installation and process

1. Both devices are preloaded with jobs to achieve according to your field measurement campaign requirements.
2. Install compact devices (175×155×75mm) at the points A and B, as depicted above, delimiting the grid portion you want to characterise.
3. Using a handheld computer or a smart-phone / tablet, schedule the jobs and the measurements will be automatically processed.

Device design © *TRIALOG*

4. The data analysis is post-processed and offers results ready for client decision-making.

Benefits

According to risk anticipation, treating a risk very early allows to significantly reduce its impact. The service proposed by *TRIALOG* is meant to be performed in an early phase of your project to avoid such exponential costs. This service may be used for the following purposes:

- Evaluation of an electrical grid to support powerline communication
- Comparison with existing electrical networks, based on our experience and published results
- Performance evaluation for one or several specific technologies (e.g. single carrier, OFDM) and frequency bands (e.g. CENELEC-A, FCC)
  - ➔ To select the suitable technologies and frequency bands
  - ➔ To evaluate the feasibility of your project use-cases

Contact us

For further information about this service, please contact: contact@trialog.com