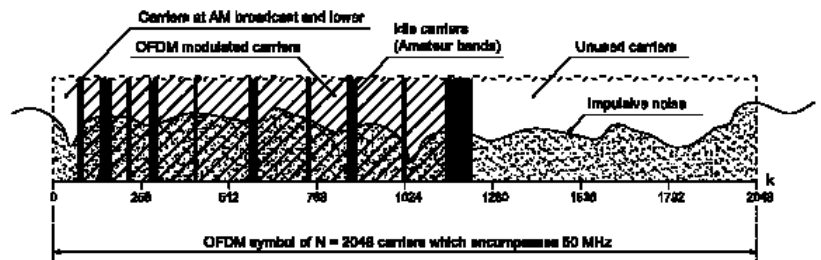


Suppression of Impulsive Noise for Power Line Communications

Inventors: Pablo Torío and Manuel García Sánchez.

Description

Power Line Communications (PLC) is an emerging field that enables to carry data on a conductor that is also used simultaneously for AC electric power transmission or electric power distribution to consumers. The widespread use of these technologies is however, compromised by the presence of impulsive noise that arises from interferences generated by devices connected to the power line. Therefore removal of impulsive noise is critical to get a high performance of PLC systems. UVIGO researchers have developed a novel methodology to mitigate impulsive noise by monitoring those carriers of the radiofrequency spectrum that are free of transmission in PLC systems. The identification of the noise signals allows its selective removal keeping the quality of the overall PLC signal.



Innovative aspects and advantages

In comparison with current procedures:

- The method is able to cancel the impulsive noise pulses leaving the signal sample contribution unscathed.
- It is not necessary any hardware modification. The method is fully firmware.
- The method is easy to incorporate in the firmware of the PLC receivers.
- The cancelling method is independent of the rest of stages of the PLC receiver. No feedback with the following stages.
- The Bit Error Rate improves more than 100 times over the threshold detection and blanking method.

Commercial applications and potential users

- Enhanced PLC receptors.
- Manufacturers of PLC receptors.
- A simulation application to check the performance of the method is available.

Patent status

Spanish patent.

Type of collaboration

Industrial partners involved in PLC are being sought to collaborate through a patent license agreement.