

Effects of high power converter on power line carrier signal

ABSTRACT

Power line carrier (PLC) systems are used in transmission of signals for teleprotection, teletripping, telecontrol and speech communication. The signal to noise ratio (SNR) of the PLC is based on the noise level at the input of the carrier's receiver. The interference due to large power converter will be superimposed on the background noise at lower level. It has reduced the SNR to an unacceptable value. This paper deals with analysis of high frequency (HF) harmonics (higher than 20 kHz) produced from the converters, and the methods used to reduce the noise imposed on the PLC communication signal. The experimental and simulation results have been obtained for both processes.

Keyword: Power line carrier (PLC); Signal to noise ratio (SNR); Noise level; Harmonic analysis