



## The Dave & Buster's Story

You may know the name Dave & Buster's. The company has over 50 locations in North America. They offer casual dining and entertainment centered on skill and sports-oriented redemption games, video games, interactive simulators and some traditional games.

A number of months ago Harmonics Limited was contacted by a power quality engineer. The engineer was working for Dave & Buster's and, in conjunction with a local electrical contractor, investigating power quality concerns at a Dave & Buster's location in Philadelphia. This particular facility was experiencing problems with the operation of their games, especially the redemption games, high maintenance on the video games and simulators and voltage drops of 20% at some outlets.

The number one problem to Dave & Buster's was the malfunctioning of the redemption games as this was causing both a loss in revenue and significant customer dissatisfaction.

There were 7 transformers serving the facility; most of them were running hot. A power quality study was performed with measurements taken at a number of transformers. The results showed particularly high harmonic currents at one 45kVA transformer loaded with a high number of redemption and video games.

While this particular transformer was only about 35% loaded almost 60% was non-linear. Third harmonic current on the neutral ranged from 35 to 45 Amps.

Following installation of a 45kVA SystemMax the problem with redemption game payouts was eliminated, maintenance on the power supplies is greatly reduced and the voltage stabilized. The neutral 3rd harmonic current reduced to 1.2 Amps.

We expect in the first half of 2013 that Dave & Buster's will go forward with a full upgrade of the electric distribution in this Philadelphia location utilizing additional HL technology as required.

In this successful application of Harmonics Limited technology Dave & Buster's will get saving from reduced energy consumption but the big win and an almost instant payback is the **improved revenue from the redemption games and increased uptime on all video games**. Of course, the other benefit is customer satisfaction.

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