Fuzzy Volt: A Zero Communication Authentication Scheme Based Electronic Noise from an Outlet

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1 INTRODUCTION

Voltkey is a new type of family WiFi access product intended to use no password authentication but retain the security and simplicity that password based authentication schemes have. To accomplish this, Voltkey implements an environmental authenticatio scheme. Due to many different types of living situations, there is a lack of environmental variables that remain consistant from a person's home. Therefore, the only reliable source of randomness lies within the wall, i.e the electricity. Electrical noise is not inheriently random. If an individual does not use any electronic devices within the residence, the noise remains consistant. Although, in the modern age of technology, the likelyhood of a residence not using any powersource besides a router and the Voltkey devices is miniscule. The implication of that a customer buys a Voltkey is based on the fact they have several devices that need fast and simple connection to the internet. Therefore, a person who uses Voltkey is much more likely to generate electrical noise from their devices.

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