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# Component level energy accounting and fault detection on electrical devices using power signatures

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**Abstract:**  
This paper investigates the possibility of identifying internal components activity and behavior by analyzing the power signature of the system under test. Furthermore, paper signature enables estimation of component level energy accounting and detection of components with incorrect execution causing failures of the system.

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## Contents

Download PDF	<b>I. Introduction</b> We are witnessing the fast spreading of smart grid technology deployments, which combines applications and solutions from both power systems and computing systems domains. Therefore, with our work we aim to propose and develop applications on top of smart grid power infrastructures that monitor, analyze, classify and characterize various electronic equipment connected to this infrastructure. The present paper aims at discussing the future applications of Advanced Metering Infrastructure (AMI) and how they can make use of consumer electronic equipment power signatures. This paper investigates the possibility of identifying internal components activity and behavior by analyzing the power signature of the system under test. Furthermore, power signature enables estimation of component level energy accounting and detection of components with incorrect execution causing failures of the system.	
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