

e-SENSE: A Non-Intrusive Load Monitoring Technique

Introduction

CSIR-CSIO developed 'e-SENSE' (Energy Sense) device which is used to monitor the on/off status and energy consumption of individual appliances (loads) using Non-intrusive Load monitoring (NILM) technique. The developed e-SENSE is plug and play type device which can be connected to entry point of residential/commercial buildings. The e-SENSE uses AI/ML approach to disaggregate the individual appliance's status and energy consumption from the aggregated energy data.

Features

- ✚ In house developed intelligent hardware and software for e-SENSE
- ✚ Single-device solution for measuring and displaying events, status, and energy of connected appliances.
- ✚ Capable of effectively managing diverse loads with varying ratings.
- ✚ Real-time online load monitoring via web interface and user-friendly dashboard.
- ✚ Capability to measure single/three phase loads up to 1000 Amps
- ✚ Intelligent and robust system for load disaggregation from the aggregated load data
- ✚ Cloud connectivity for remote real-time monitoring
- ✚ Edge computing & Cloud computing features with Wi-Fi interface

Applications

- ✚ Energy Management in various sectors (industries, commercial buildings, hospitals, hostels, campus, hotel industries)
- ✚ Health Monitoring for mission-critical applications
- ✚ Anomaly Detection functionality
- ✚ Life Cycle Assessment (LCA) of loads
- ✚ Alternative for smart energy meter with additional intelligent feature



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