



**CEA**<sup>®</sup>

Consumer Electronics Association

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# Energy Consumption and Standards

UC Irvine CalPlug Set-Top Box Energy Efficiency  
Workshop

February 1, 2012

# ***“Energy Consumption of CE in U.S. Homes in 2010”***

- Released December 2011
- Conducted by the Fraunhofer Center for Sustainable Energy Systems
- Quantify the electricity consumption of CE products in U.S. households in 2010



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- 2.9 billion CE devices in U.S. households and an average of 25 devices per household
- Consumer electronics (CE) account for a relatively small share - roughly 13 percent - of the average U.S. home's electricity consumption
- Set-top boxes account for 13 percent of total household CE energy consumption

# Two Major Product Categories

- Pay-TV STBs
- Stand-Alone STBs (OTA-DTAs, stand-alone DVRs, digital media adapters)



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# Installed Base, mid-2010

- Pay-TV STBs
  - Cable: 86.8 million
  - Satellite: 76.1 million
  - Telco: 15.9 million
- Stand-Alone STBs
  - OTA-DTA: 33 million
  - DMA: 8.9 million
  - DVR: 3 million



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# Unit Energy Consumption

- Pay-TV STBs
  - Cable: 150 kWh/yr
  - Satellite: 112 kWh/yr
  - Telco: 115 kWh/yr
- Stand-Alone STBs
  - OTA-DTA: 29 kWh/yr
  - DMA: 68 kWh/yr
  - DVR: 275 kWh/yr

# Annual Energy Consumption

- Pay-TV STBs
  - Cable: 13 TWh/yr
  - Satellite: 8.5 TWh/yr
  - Telco: 1.8 TWh/yr
- Stand-Alone STBs
  - OTA-DTA: 1 TWh/yr
  - DMA: 0.8 TWh/yr
  - DVR: 0.6 TWh/yr

# CEA Standards - Current

CEA-2013-A (ANSI)

*Digital STB Background Power  
Consumption*

CEA-2022 (ANSI)

*Digital STB Active Power Consumption  
Measurement*



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# CEA Standards - Upcoming

CEA-2043

*Set-top Box (STB) Power Measurement*

- Includes On Mode and Standby Mode
- Harmonizes with CSA C-380 and IEC 62087

Publication target date: Fall 2012



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Energy efficiency improvements in consumer electronics are driven by innovation, competition and market-oriented programs such as ENERGY STAR.

Industry-led standards pave the way.



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Bill Belt

Consumer Electronics Association

703-907-5249

[bbelt@CE.org](mailto:bbelt@CE.org)



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