



# ENERGY STAR Recognition Program: Game Consoles

## Draft 2 Webinar

March 2, 2012

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ENERGY STAR Program



Learn more at [energystar.gov](http://energystar.gov)

# Agenda

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**Topic**

**Introduction**

**Game Console Test Method**

**Game Console Performance Criteria**

**Discussion**



# Game Console Test Method

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# Test Method Introduction



August 4, 2011 – Game Consoles Draft 1 Test Method published

- Provided approach for measuring power levels
- Verified Automatic Power Downs (APDs)
- Included bi-directional TV management testing

September 20, 2011 – Game Consoles Webinar & Stakeholder Comments

- Testing Game Play Modes?
- Auto Power Down Measurements?
- TV management settings outside of program scope?

February 21, 2012 – Game Consoles Draft 2 Test Method published

- Added and removed testing modes
- Provided additional Requirements for APD testing

# Draft 1/Draft 2 Comparison



Test	Mode/Requirement	Draft 1	Draft 2
Modal Power Measurements	Off		✓
	Idle	✓	✓
	Sleep	✓	✓
	Video Stream Play	✓	✓
	Video Stream Pause	✓	✓
	Video Stream Idle	✓	
	Game Play Pause	✓	
	Game Play Idle	✓	

# Draft 1/Draft 2 Comparison



Test	Mode/Requirement	Draft 1	Draft 2
APD Testing	Visual Verification of APD	✓	
	Power Measurement		✓
	Verify UUT returns to previous state on resume		✓
APD Test Modes	Idle	✓	
	Game Play Pause	✓	✓
	Game Play Idle	✓	
	Video Stream Play	✓	
	Video Stream Pause	✓	✓
	Video Stream Idle	✓	
Other	Bi-directional TV Management Test	✓	

# Issues with Game Play Testing



- Factors that affect Game Play power levels:
  - Visual Effects
  - Game Title
  - Game Level/scenario
  - User Input
- Difficult to repeat results
- Difficult to compare results
- Applies to all Game Play Modes  
(Active, Idle, & Pause)

# Issues with Game Play Testing



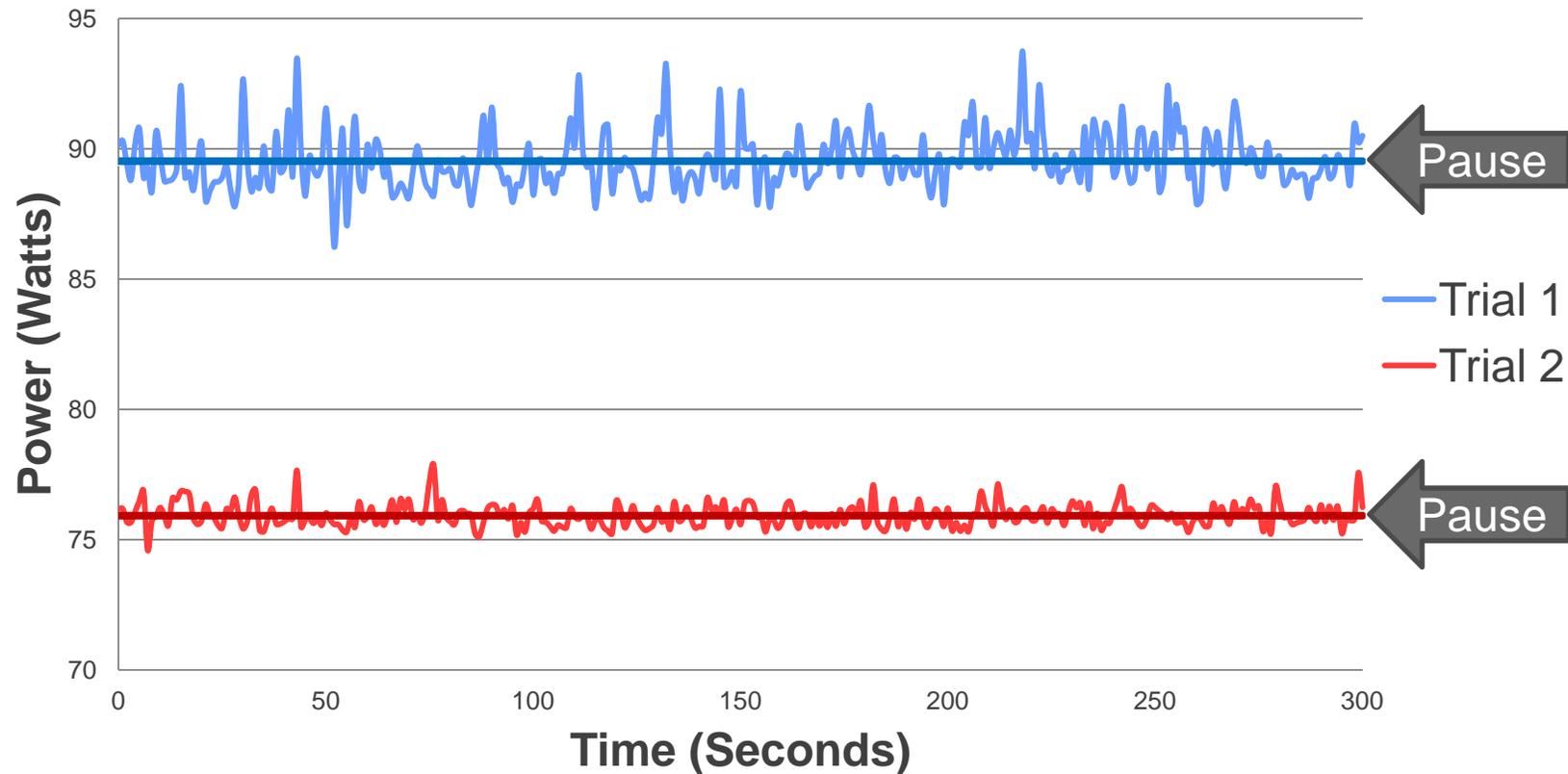
- Example
  - Two trials
  - Identical console, game title, and level
- Power variation caused by on screen visuals, varying load on UUT
- Difference of 13.6 watts in average power

Test #	Average Power	Max Power	Min Power
Trial 1	89.5 W	93.7 W	86.2 W
Trial 2	75.9 W	77.9 W	74.6 W

# Issues with Game Play Testing



## Game Play Idle Mode Test



# APD Requirements

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- UUT must power down within one hour of user inactivity
- Upon resuming, UUT must return to the mode the console was in prior to the APD
  - From Video Stream Pause, UUT must return to the same location in the video
  - From Game Play Pause, UUT must return to the same game state/conditions
- APD mode must meet power requirements

# APD Testing

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- Reduced from six APD tests to two
  - Video Stream Pause APD
  - Game Play Pause APD
- Added power measurements to APD testing
  1. Wait one hour after ceased user input
  2. Take 5 minute power measurement and record the average
  3. Verify that UUT returns to the previous state when resumed

# Off Mode Testing

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- Off mode is similar to Sleep mode except that there is no active network connectivity
- Added language for an Off mode test
  - identical to the language for testing Sleep mode
- Tested when applicable; not all consoles have an Off Mode

# TV/Display Requirement Updates



- Specification no longer requires bi-directional TV management
- Connection Type Preference (harmonizing with ENERGY STAR Displays Version 6.0)
  - HDMI
  - DVI
  - Other Digital Interface
  - Analog Component
  - Analog Composite
  - Other Analog Interface

# Other Modifications

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- Removed Video Stream Idle Test
  - Intended to test the console's media player with no media loaded
  - Test overlapped with other Video Stream modes, unnecessarily increasing test burden
- Reorganized content from the Test Procedure into the Test Conduct section for increased clarity



# Draft 2 Performance Criteria: Overview

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# Draft 2

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- Based on stakeholder feedback, various aspects of the performance criteria were updated (indicated with noteboxes)
- Section 1: Definitions
  - Edits to align with industry-standard definitions
  - Added Off Mode
  - Sleep Mode modified to clarify that it excludes both game play and media (“content delivery”) activity
  - Idle renamed to “Navigation Menu Idle”
  - Added DVI and HDMI definitions

# Draft 2

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- Performance Criteria
  - Removable Media no longer tested
  - Exemption of Auto Power Down requirements when playing legacy games
  - Display Sleep Mode
    - Stakeholders commented that this Draft 1 requirement suggested Bi-directional TV power management
    - While such functionality would be ideal, it is not possible for all output types and has been removed from the requirements (as referenced in Test Method discussion)

# Looking ahead to Draft 3

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- Proposed Energy Efficiency Requirements



# Closing

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# Timeline



Topic	Timeframe
<i>Draft 2</i>	<i>Distributed on February 21, 2012</i>
<b>Close of comment period on Draft 2</b>	<b>March 9 March 30</b>
<b>Revised Proposed Game Console Performance Requirements and Test Method</b>	Early April

# Meeting Action Items



## EPA

- Organize discussion of power supply test method load points with developers of the internal or external power supply test methods if needed
- Investigate the fit of a “state” present in a current generation game console that preserves network connectivity while otherwise in a non-active mode
- Extend comment period until March 30
- Explore hosting an in person meeting following March 30 deadline

## Stakeholders

- NRDC, Sony, Microsoft, Nintendo, and the ESA develop proposal that they will share with EPA in writing or on a call by March 30 for:
  - Resume feature after APD (game and media)
  - Default treatment of APD features in the as-shipped state
  - Active Mode testing
- Manufacturers to provide input on console power ranges (encompassing the range of power required to support Off to Active) to inform possible tailoring of the power supply criteria to operational load levels

# References and Resources

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- ENERGY STAR Game Consoles:  
[www.energystar.gov/NewSpecs](http://www.energystar.gov/NewSpecs) (click on Game Consoles)

# Thank you!

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