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INTERNATIONAL ENERGY EFFICIENCY IN
DOMESTIC APPLIANCES & LIGHTING CONFERENCE '06

TV Measurement – Test Conditions

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The Challenge

Question: What are the test conditions that should be used for a TV Test Method?

- There are two basic aspects to this question.
 - **Video Settings**
 - **Audio Settings**
- Common elements to consider are:
 - **Simplicity**
 - **Practicality**
 - **Accuracy**
 - **Fairness**

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Video Testing Conditions 1

Aspects Of Video Test Conditions

- The Testing Conditions should reflect the normal use of a TV.
- TVs are tend to be delivered in one of two ways:
 - **The Manufacturers recommended store display and an optional recommended Home Use.**
 - **With a Interactive feature that allows selection of a number of settings including Home and Store Display settings.**
- Some TVs (A Growing Number) allow additional manipulation of Colour, Sharpness ect. But not the main determinator of Power Consumption Luminance.
- A growing number of LCD TVs have light sensors that alter the backlight according to ambient conditions

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Video Testing Conditions 2

What Should be the Testing Conditions?

- TV testing options:
 - Test method prescribes Test Condition – Maybe not Normal Home Viewing Condition.
 - TV is Tested as Out of The Box Condition – Maybe a Store Display condition rather than Normal Home Viewing.
 - If Normal Home Viewing selection is Specified – Maybe not Available.
- Ambient Backlight control Test Options
 - Set Backlight Control Off
 - Prescribe an Average Room Ambient level
 - Average the Black Room (Sensor Covered) and white Out (Bright Light) Condition Measurements.

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Audio Testing Conditions 1

Aspects of Audio Testing Conditions

- Audio Test Conditions are Complicated
- How much Power does Audio actually Use?
- Hard to establish Audio Test Criteria.
- Large Variation in product offerings.
- Uncertainty with Normal Home Use.

Audio Testing Conditions 2

The Main Issues

- **Test Conditions and Criteria**
 - **Audio tests require more complicated equipment. Sound Pressure Equipment? Anechoic Conditions?**
 - **Require a sound source. Pink Noise? 1 Khz Sine wave. Sub Woofer Response?**
 - **What Characterises Normal Audio Level Criteria**
- **Audio Power Use.**
 - **Recent Measurements show maybe only 1W difference between normal Audio Levels and 0 Volume.**

A Suggestion Forward

- Test TV as Delivered and with the Manufacturer's Normal Home Video Option set if available.
- If TV has Auto Light detection, average Dark and Bright room conditions
- Test with no Audio.