

Mitsubishi Digital Electronics America Inc.
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VIA EMAIL

December 15, 2010

ENERGY STAR Program
Environmental Protection Agency
Washington, DC
televisions@energystar.gov

Re: Proposed Changes to ENERGY STAR Program Requirements for Televisions (v5)

Dear ENERGY STAR Program:

Mitsubishi Digital Electronics America (MDEA) is proud to be a leader in the effort to minimize the impact of electronics and manufacturing on our environment, and is pleased to participate in many environmental initiatives, including the ENERGY STAR® program. We have devoted significant resources to participating in the ENERGY STAR program and developing large screen televisions that are very energy-efficient. Unfortunately, the power ceiling in the Program Requirements v5 causes some of the most energy-efficient televisions on the market to fail to qualify for ENERGY STAR.

On November 23, the EPA outlined several proposed changes to the ENERGY STAR Program Requirements for Televisions.¹ We appreciate the opportunity to comment on changes to the ENERGY STAR program for televisions, and look forward to participating in the activity to improve the ENERGY STAR program.

Effective Date

It is very difficult for television manufacturers to adjust to a last-minute change to the ENERGY STAR qualification requirements. It is now early December, and products are being introduced, unveiled and presold now and at the Consumer Electronics Show in early January. New products (“2011 models”) will be going into production sometime between early spring and summer.

Because it is very expensive and time-consuming to make changes mid-model year, we generally plan to perform all tests (safety, regulatory and otherwise) only one time per model. For products that begin manufacturing production in the spring, testing is commencing imminently – and because of the Enhanced Testing and Verification requirements that take effect in January, these tests are beginning in early January.

Production planning processes, logistics, shipping time and various other tests require between 8-12 weeks between completion of ENERGY STAR testing and the first production date. As a result, if ENERGY STAR testing can be in January, production cannot begin until late April (earliest), and mid-May (more likely).

Furthermore, we have little confidence that external ENERGY STAR testing laboratories and Certification Bodies will have sufficient capacity to test all the products put to them in

¹ Letter from Katharine Kaplan, Nov. 23, 2010.

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January, and so we must make our production plans on a realistic assumption of testing schedules.

Therefore, any changes to the ENERGY STAR Program that are promulgated after September cause a significant hardship on us. We are forced to make last-minute changes and depend on precise timing for a whole host of dependencies – any of which could cause significant production delays, missed deadlines, and significant financial losses.

Nevertheless, we understand that there are pressures on EPA to advance the v5 requirements. Frankly, an August 1, 2011 effective date would be significantly less disruptive to our manufacturing and engineering processes than the proposed date (which is approximately 8 months between final specification and effective date).

Efficient Large Screen Televisions Qualification

The energy efficiency of a television should be analyzed in terms of power consumed per screen size (relatively), not by aggregate consumption (absolutely). Fundamentally, the vast majority of power consumed by a television is by the emission of light spread about the screen area in a way that humans can see it. One good way to evaluate *efficiency* is to evaluate the power consumed per screen area (e.g., milliwatts per square inch). Additionally, televisions are not fungible – they are not all the same and interchangeable. Smaller televisions serve a certain consumer need, and larger sets serve a different need; it is a mistake to promote energy-efficient televisions without considering energy *efficiency* foremost.

MDEA is the only manufacturer of very large screen televisions,² and would be significantly affected by a *power cap*, such as contemplated by the current Program Requirements v5. We do not believe that the power cap serves to reward energy *efficiency* — the most efficient televisions on the market would be disproportionately disadvantaged by the cap.

Of the 757 115v televisions listed in the ENERGY STAR Database dated 12/1/10, the average relative power consumption is approximately 133 mW/in², which represents a range of 50 mW/in² to 310 mW/in² (196 mW/in² if the 7" OLED television is excluded) (see Exhibit A).

In aggregate, televisions smaller than 50" consume 141.3 mW/in², and televisions larger than 50" (and therefore subject to the power consumption ceiling in v5) consume 103.8 mW/in² – that is, televisions larger than 50" are about 75% *more* efficient than smaller sets. Furthermore, the most energy efficient is a 75" television (49.1 mW/in²) and 39 of the 50 most efficient televisions are larger than 50".

We suggest that a formula with a smaller slope should be employed for televisions with screen area > 1068 in². For example, the formula shown in Formula 1, below would maintain v5.1 consumption requirements for screen sizes less than 1068in², and adopt a shallower slope (but still increasing) consumption requirement for televisions with screen area larger than 1068in².

² MDEA is the only large volume producer of self-contained televisions larger than 65" measured diagonally. We note that there are some products available in small quantity or special-order, but are properly excluded from a discussion of televisions that a consumer is likely to purchase.

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$$\left\{ \begin{array}{ll} A < 275in^2 & : P_{ON_MAX} = (0.130 \times A) + 5.0 \\ 275 \leq A \leq 1068in^2 & : P_{ON_MAX} = (0.084 \times A) + 18.0 \\ A > 1068in^2 & : P_{ON_MAX} = (0.065 \times A) + 68.0 \end{array} \right.$$

Formula 1 - Suggested v5.3 P_{ON_MAX} Formula

Power Overhang

On October 1, 2010, MDEA responded to the proposal for Power Overhang requirements that were described in the Draft Version 4.2 ENERGY STAR Program Requirements for Televisions distributed September 14, 2010. We stand by our comments made at that time; if Power Overhang is to be defined and limits specified, it should be as described in MDEA's October comments (attached as Exhibit B).

Please feel free to contact us if you have any questions or if I may be of any further assistance.

Sincerely,

/s/

Harlan Rogers
Senior Manager, Product Compliance
Mitsubishi Digital Electronics America

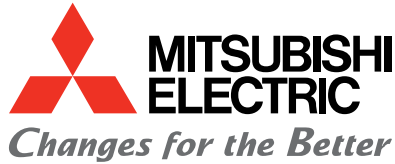
Cc: Katharine Kaplan

Attachments: Exhibit A – Average Efficiency Table
Exhibit B – Comments on TV 4.3 Revision

Exhibit A

Screen Size (inches diagonal)	Average Power Efficiency (mW/in²)
7	309.52
16	196.12
18	154.05
19	158.22
20	181.50
22	155.24
23	176.25
24	151.47
25	196.05
26	170.78
27	178.43
28	152.79
32	152.55
37	130.45
40	123.95
42	129.11
46	111.77
47	108.78
50	130.36
52	93.89
54	127.40
55	96.10
58	121.54
60	88.88
63	123.63
65	113.56
73	94.50
75	50.10
82	74.95
Average (for all models)	133.25

EXHIBIT B



Mitsubishi Digital Electronics America Inc.
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VIA EMAIL

October 1, 2010

ENERGY STAR Program
Environmental Protection Agency
Washington, DC
ENERGYSTARVerificationProgram@energystar.gov

Re: Proposed Substantive Clarifications to ENERGY STAR Program Requirements for Televisions

Dear ENERGY STAR Program:

Mitsubishi Digital Electronics America (MDEA) is proud to be a leader in the effort to minimize the impact of electronics and manufacturing on our environment, and is pleased to participate in many environmental initiatives, including the ENERGY STAR® program. We have devoted significant resources to participating in the ENERGY STAR program and developing large screen televisions that are very energy-efficient (and meet ENERGY STAR qualification requirements).

In the letter of September 14, 2010,¹ the Environmental Protection Agency (“EPA”) solicited comments on “refinements” of several ENERGY STAR Product Specifications, including Televisions. As an initial matter, the ENERGY STAR Program Requirements for Televisions Eligibility Criteria Draft Version 4.2 has an effective date (shown in Table 4 near line 287) in the past (April 30, 2010).

More importantly, draft 4.2 includes changes which materially and adversely affect MDEA products’ ENERGY STAR qualification due to specific requirements of technologies that are used by MDEA which we have not previously been afforded an opportunity to comment on.

Power Overhang

Power Overhang is newly-defined to mean “[a] power state within On Mode that is intended to facilitate a rapid return to full functionality in the event a product is accidentally switched off.” Requirements are made vis-à-vis Power Overhang in Section 3.3.3:

- i. Any Power Overhang state that occurs after the user has sent a command to switch the product into Sleep Mode, and immediately preceding entry into Sleep Mode, shall be less than 3 minutes in duration.*
- ii. Measured Power during the Power Overhang state shall be less than or equal to the Maximum On Mode Power Requirement (P_{ON_MAX}) specified in section 3.3.1.*

There are at least two reasons for a television to consumer approximately P_{ON_MAX} after a user selects Sleep Mode. The first is as referenced in the definition of Power Overhang, “to remain in a highly-functional ‘ready’ state for a limited amount of time after being switched off by

¹ Letter from Ann Bailey, Chief, ENERGY STAR Labeling Branch, US Env’tl. Prot. Agency, Sept. 14, 2010.

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the user.” To the extent that EPA wishes to limit the amount of time spent in a “ready” state”, we have no comment.

However, some television display technologies require a certain amount of time to transition into Sleep Mode. For example, rear projection DLP televisions – which only MDEA is manufacturing – have a lamp which requires fan-assisted cool-down, and requires exercise of the DLP micromirrors for a period of time during the transition to Sleep Mode.² These are mandatory, necessary operations which extend the service life of the lamp and television. Omitting these steps would cause a significantly decreased product life.

Fortunately, we do not believe that EPA’s intent is to prohibit such operations in an ENERGY STAR-qualified device. We suggest that the following changes to the draft of the Program Requirements v4.2 would achieve EPA’s goal of allowing a short “ready” time, without prohibiting unavoidable maintenance operations.

1. Revise (1)(G)(1)(a) at lines 58-61 as follows (deletions shown as ~~red strikethrough~~, insertions shown as blue underline):
 - a) Power Overhang State: A power state within On Mode that is intended to facilitate a rapid return to full functionality in the event a product is accidentally switched off. This feature is present in some products that are designed to remain in a highly-functional “ready” state for a limited amount of time after being switched off by the user. Cool-down and maintenance functions that are performed during a transition from On Mode to Sleep Mode, that are not intended to facilitate a rapid return to full functionality, are not included in Power Overhang State.
2. Revise section 3.3.3 at lines 186-191 as follows (deletions shown as ~~red strikethrough~~, insertions shown as blue underline):

“3.3.3 Power Overhang:

 - i. Any Power Overhang state that occurs after the user has sent a command to switch the product into Sleep Mode, and immediately preceding commencing transition entry into Sleep Mode, shall be less than 3 minutes in duration.
 - ii. Measured Power during the Power Overhang state shall be less than or equal to the Maximum On Mode Power Requirement (P_{ON_MAX}) specified in section 3.3.1.”
3. Insert new section 3.3.4 after line 191 as follows (deletions shown as ~~red strikethrough~~, insertions shown as blue underline):

“3.3.4 Transition from On Mode to Sleep Mode:

Transition from On Mode to Sleep Mode, excluding the duration of any Power Overhang, shall be less than 9 minutes in duration.”

² Other DLP products have similar requirements but are not covered by the ENERGY STAR program for televisions, for example, DLP front projectors and DLP data projectors.

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Please feel free to contact us if you have any questions or if I may be of any further assistance.

Sincerely,

/s/

Harlan Rogers
Senior Manager, Product Compliance
Mitsubishi Digital Electronics America

Cc: Katharine Kaplan