

REF NO.	Document	Date	Organization	Commenter	Line No.	Topic	Comment	EPA Response
23	Specification Framework Document	2/4/2009	Biamp Systems Corporation	Larry Copley	N/A	Consumer vs. Professional Products	Consider using "Residential" as a key word for defining what is currently being called "Consumer". This may avoid confusion between "Residential Consumer" and "Commercial Consumer."	The definitions have been updated. Wherever necessary, the terminology "commercial" and "residential" will be used in ENERGY STAR documentation. It is EPA's intent to keep requirements for all AV products as consistent as possible irrespective of the market into which they are sold.
24	Specification Framework Document	2/4/2009	Biamp Systems Corporation	Larry Copley	N/A	Digital Signal Processing	"Signal Processing" is employed in both Residential and Professional Audio/Video alike. The same Digital Signal Processors (DSP) and supporting computing architecture are used to create various surround sound modes in a residential home theater Audio/Video Receiver that are used in Professional Audio DSP to mix signals, equalize for room acoustics, multiple room configuration presets, prioritize public announcements, cancel echo in teleconferencing, monitor and adapt to room ambient noise, etc. Therefore, I recommend not limiting Signal Processing function to Professional only. Signal Distribution and Switching before amplification is also in the realm of Signal Processing.	Included in draft 1 specification
25	Specification Framework Document	2/4/2009	Biamp Systems Corporation	Larry Copley	N/A	Product Categories	If function based energy budgets are available, the list of product types can be simplified. For example: - Residential "AV Receiver" is simply combination of Amplifier and Signal Processor. - "Home Theater in a Box" is a combination Amplifier, Signal Processor, DVD Player. - A higher end "AV Receiver" could also include "Amplified AV signal Distribution".	While EPA can assign a certain energy budget for different functions, there may also need to be an allowance for certain base products. The data EPA collects will inform the way energy budgets are allocated.
26	Specification Framework Document	2/5/2009	TIVO	Philips Hedges	NA	MPEG encoding	<p>The lack of inclusion of MPEG (both 2 and 4) encoding as a feature that warrants a boost in TEC numbers is not consistent with the experience of the user or with other features that are called out in the spec. Consumers in the U.S. still get the majority of their video content in an analog format using antenna [until June 09 at least], ATSC converter boxes with analog output (most of them), and analog cable (still a majority). For these consumers being able to turn that analog content into digital content that can be uploaded and shared is definitely a feature, and this feature involves substantial hardware. If a box does not allow the movements of this content off the box then I agree that the encoding is just for the convenience of the hardware implementation, but for boxes that also can send this data onto the user's network to be consumed elsewhere, this is now a feature for the customer. As was said on the call Energy Star is trying to make the products of each type more efficient, it isn't trying to define what sort of products should be available.</p> <p>Since consumers have demand for a product with the feature of turning analog inputs into digital files for their use it doesn't make sense for Energy Star to decide that isn't a feature. Instead Energy Star should call it a feature just like other features but just make sure that the power you allocate for that feature is consistent with the low energy state of the art. This hardware is expensive as it is, we aren't trying to put hardware in that doesn't generate value for the customer, and we are spending extra money to make sure it is higher efficiency than it was. But having genuine features that consume power being deemed "not features" makes the spec an obstacle rather than a useful guideline.</p>	This type of feature should be characterized in the notes section of the data collection form for consideration as a feature that merits a separate energy budget
28	Specification Framework Document	3/3/2009	U.K. Market Transformation Programme	Geoff Bellingham	Building Block #1	Auto-Power Down	In regards to defining auto-power down at the component level, while this has the potential to offer greater energy savings (and is therefore a laudable goal), it may also be a more complex solution for a manufacturers of integrated AV systems. It will be very important to get good stakeholder feedback on this point. This also highlights the need to define exactly what a "component" is – is it something with it's own power supply, or a functional block of an integrated system with a single power supply?	EPA has no plans to prescribe component level APD. APD requirements are included in the draft 1 specification
29	Specification Framework Document	3/3/2009	U.K. Market Transformation Programme	Geoff Bellingham	Building Block #1	HDMI (CEC) interface	MTP recognizes the significant benefit of including this measure but are also concerned whether industry agreement can be reached within the timescale proposed for the implementation of the specification. Currently suppliers are having difficulty in implementing the protocol across just their own ranges, so much work is to be done before it can be implemented across industry.	ENERGY STAR regularly works with standards bodies in development of new technologies and standards to promote energy efficient design. EPA welcomes additional information and dialogue on what it would take to have these much needed changes made.
30	Specification Framework Document	3/3/2009	U.K. Market Transformation Programme	Geoff Bellingham	Building Block #1	Operational modes	The definition of sleep and the reason for dealing with it in this way to gain flexibility is recognized. Care will need to be taken in the drafting of the test specification to ensure that the various modes within "sleep" are properly accounted for in the use cycle to avoid manufacturers accumulating modal power allowances which could make the TEC compliance measure easier to achieve.	ENERGY STAR only recognizes one sleep state and understands that this state is dynamic because of various functions that can periodically occur within that state. We feel the best way to handle this is to increase the measurement time to ensure that a true average of behavior is captured.

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31	Specification Framework Document	3/3/2009	U.K. Market Transformation Programme	Geoff Bellingham	Building Block #1	Product Classification	MTP recognizes the desire to separate the product categories in this way, but are concerned that the definition of each category is not yet sufficiently rigorous to prevent manufacturers of some marginal products selecting the most advantageous category to achieve compliance.	Reviewing test data will allow EPA to more tightly define products to ensure proper use of energy budgets. Any specific ideas for tightening the definitions are welcome.
32	Specification Framework Document	3/3/2009	U.K. Market Transformation Programme	Geoff Bellingham	Building Block #2	Eligible Product categories	The product categories and explanation are clear. It will be very important to expand on these and the definition of components when the test methodology is defined to avoid confusion when testing products where the functional elements are very closely integrated.	Included in draft 1 specification
33	Specification Framework Document	3/3/2009	U.K. Market Transformation Programme	Geoff Bellingham	Building Block #3	Energy Efficiency Criteria and Test Procedures	Using existing test methods wherever practicable will greatly promote understanding of what is required and speed the implementation of the new specification. The use of duty cycles within the new specification need to recognize the various "levels" of sleep that the definitions allow, as many products transition from one level to another after a time interval.	See #30
34	Specification Framework Document	3/3/2009	Natural Resources Defense Council	Nick Zigelbaum and Pierre Bull	N/A	Energy Efficiency Criteria and Test Procedures	We understand the degree of difficulty in designing an appropriate framework to approach the energy efficiency specification design for this product category. As such, NRDC believes that a modal approach for A/V products is an appropriate framework to capture the wide-ranging, yet still discrete, product functionalities that lie within this product category.	A modal approach for determining efficiency requirements is included in the draft 1 specification
35	Specification Framework Document	3/3/2009	Natural Resources Defense Council	Nick Zigelbaum and Pierre Bull	N/A	Function Matrix	To get the most clear and least gameable spec with proven results in the marketplace, we recommend using the Function Matrix framework to identify power limits for On/Active and Sleep Mode, and then calculate Total Energy Consumption (TEC).	The approach for determining efficiency requirements is included in the draft 1 specification
36	Specification Framework Document	3/3/2009	Natural Resources Defense Council	Nick Zigelbaum and Pierre Bull	N/A	Function Matrix	The ENERGY STAR development team took an important first step in developing the framework for A/V products by designing the "Function Matrix." This matrix framework makes clear distinction between the various product uses in terms of the discrete technical drivers that drive certain product functions. We recommend that EPA go beyond use of the matrix for just product/function definitional distinctions and use the function matrix framework to fill in reported power numbers from industry for both On/Active and Sleep Mode. EPA can then more easily calculate TEC based on the number and type of discrete product functionalities that a given product is marketed to do and set modal limits reflecting industry best practices.	EPA plans to include levels using this approach in the draft 2 specification once test data has been collected.
37	Specification Framework Document	3/3/2009	Natural Resources Defense Council	Nick Zigelbaum and Pierre Bull	N/A	Auto-Power Down	To get the most clear and least gameable spec with proven results in the marketplace, we recommend Require auto power down (APD) (e.g. device goes to sleep/standby mode after X hours of user inactivity) with clear test method language to verify this is occurring.	APD functionality is required in the draft 1 specification. EPA will consider exceptions to APD requirements for specific products. For example, products such as amplifiers used in emergency PA systems will likely need to be given special consideration since that need to be ready to perform in critical situations.
38	Specification Framework Document	3/3/2009	Natural Resources Defense Council	Nick Zigelbaum and Pierre Bull	N/A	Consumer vs. Professional Products	We recommend no distinction between "consumer" and "professional" products.	See #23
39	Specification Framework Document	3/3/2009	Natural Resources Defense Council	Nick Zigelbaum and Pierre Bull	N/A	Consumer vs. Professional Products	By employing modal limits as described above, it is inappropriate to distinguish between "professional" and "consumer" nor "commercial" and "residential" as a means to further categorize these products. Modal limits make this distinction unnecessary as the distinction is only useful for determining usage patterns, which are not needed for testing modal limits. Furthermore, creating this distinction would seem to only provide an avenue for gaming the system by allowing a given manufacturer to apply for either a Commercial or Consumer test method, whichever may be easier to achieve for a given product.	EPA will consider how the modal approach applies to different AV products as appropriate. For some products, it may make sense to differentiate between commercial and consumer, whereas with others there will be no basis for this distinction.
40	Specification Framework Document	3/3/2009	Natural Resources Defense Council	Nick Zigelbaum and Pierre Bull	N/A	Low Power Sleep Mode	the definition provided in the second bullet for auto power down to Sleep Mode is problematic. The definition currently says, "The device auto powers down to a Sleep state. The energy consumption after auto power down to Sleep and after a user initiated power down to Sleep may, or may not be, equivalent." Whether the Sleep Mode is initiated by the user or through APD, the lack of an equivalent Sleep Mode limit between the two may completely undermine the potential savings from APD. In other words, a given piece of equipment may not reduce consumption at all while employing a robust APD feature. However the TEC method intends to reward equipment with significant Sleep Mode reductions, this places the pressure on the test method to carefully capture these savings. To enhance the effectiveness of the specification and guard against potential gaming, the specification should impose a low wattage limit on Sleep Mode energy use that is consistent for both user-initiated and APD.	EPA has modified the definition in the draft 1 specification document.

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41	Specification Framework Document	3/3/2009	NuVo Technologies	Scott Rhinehart	Page 5	Web Audio Devices	<p>We design and manufacture whole home audio systems. In the "ENERGY STAR Audio/Video Draft Specification Framework February 2009" on page 5 it has the following category.</p> <ul style="list-style-type: none"> - Media Server - Whole-house Audio System: Centralized audio/video system that distributes AV signals to different rooms throughout the home. Remotely-located control panels regulate the signals in each output location. <p>1 Digital Music Server System 2 Video Distribution System</p> <p>The first bullet under Media Server describes our systems well with the exception that we only distribute audio and do not distribute video. However, in the "ENERGY STAR® Audio/Video V2.0 Preliminary Test Procedure Draft // 26 February 2009" that category is not specifically mentioned. The closest product referred to is on the last line of page 1: "Digital Media Server." Will there be a product category for "Whole-house Audio System," or will our equipment fall under "Digital Media Server" or another category?</p>	At this point EPA has not precluded this product from inclusion in the spec. EPA welcomes suggestions for ensuring the test procedures address this product category appropriately.
83	Specification Framework Document	3/30/2009	The Sextant Group	Dave McDiarmid	N/A	Consumer vs. Professional Products	<p>Please take into considerations variations between consumer-oriented electronics and commercial-rated electronics and systems. Commercial equipment is typically rated at 24/7 usage; components, heat dissipation & construction are typically held to tighter parameters of performance. Commercial systems serve a variety of communication needs associated with commercial/professional activities and include a wide range of markets, from corporate, mfg, financial, healthcare, education, worship, government and military, in very broad strokes.</p>	EPA will review data from manufacturers and look for feedback on features that require additional energy allowances.
84	Specification Framework Document	3/30/2009	The Sextant Group	Dave McDiarmid	N/A	Consumer vs. Professional Products	<p>General categories of commercial systems would include, among others:</p> <p>Sound</p> <ol style="list-style-type: none"> 1. Engineered sound Systems (Performing Arts Centers, movie theatres, public auditorium spaces, etc.) 2. Commercial Sound Systems (paging, constant voltage (70v) systems, sound masking, zone paging, etc. <p>Video</p> <ol style="list-style-type: none"> 1. Conference/boardroom audiovisual systems 2. Videoconferencing systems (telemedicine, corporate, distance learning) 3. Video-on-Demand, server-based content delivery systems 4. Smart classrooms, presentation systems <p>Control</p> <p>Commercial control parameters typically include bi-directional modalities, communications back and forth between the operator and the device being controlled. In today's world, RS-232 and IP control will typically dominate, with some more specialized protocols being used in specific areas.</p>	See comment #87. ENERGY STAR is only appropriate for products that can offer significant energy savings and where labeling will effectively differentiate products. For products not currently covered in this specification, stakeholders will need to provide evidence that the product is appropriate for ENERGY STAR.
87	Specification Framework Document	3/30/2009	Acentech, Inc.	Brian E. Huff	N/A	Consumer vs. Professional Products	<p>categories of ProAV equipment that would be applicable to the Energy Star™ program:</p> <ul style="list-style-type: none"> - Audio Equipment (Mixers, Preamplifiers, Processors, Amplifiers, etc.) - Audio and Video Conferencing Equipment (CODECs) - Audio Production and Recording (Tape, CD and Hard Disc Recorders, etc.) - Cameras and Camcorders - Computers Digital Storage Drives - Control Systems and Networking - Digital Signage - Displays and Monitors (CRT, LCD, LED, Plasma, etc.) - Document Cameras and Digital Imaging - Studio Lighting (Incandescent, Fluorescent, LED and Control Consoles) - Power Management (Sequencers, Battery Backups, UPS, etc.) - (Motorized) Projection Screens - Video Projectors and Lamps - Recorders, Players and Duplication (DVD, VHS, CD, etc.) - Signal Management and Processing (Routers, Switchers, Distribution Amplifiers, etc.) - Streaming Media and Webcasting (Rich Media Recorders) Routers,) - Test and Measurement Equipment (Oscilloscopes, Signal Generators, Real-Time Analyzers, etc.) - Video Editing and Production (Video Production and Editing Consoles) 	<p>EPA has identified products for the AV specification that are not already covered by other ENERGY STAR specs and products that fit with the ENERGY STAR guiding principles. While the InfoComm product categories include a full set of professional AV equipment, some of this equipment is covered by other ENERGY STAR specifications and some would merit a separate specification. There are already specifications for: Displays and monitors, lighting, external power adapters, and battery chargers. EPA is assessing home storage, enterprise storage, uninterruptible power supplies and networking equipment for possible specifications outside the AV specification. Video projectors are currently not included in the display specification, but given appropriate test procedures and demonstration of potential for significant energy savings, EPA will consider them for inclusion in the AV specification.</p> <p>EPA is not currently considering control systems, but if provided with sufficient information to demonstrate significant measurable savings, EPA will consider these systems separately in the future. Please advise and provide additional information if there are specific AV products you believe should be addressed by this specification.</p>

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88	Specification Framework Document	3/30/2009	Acentech, Inc.	Brian E. Huff	N/A	Consumer vs. Professional Products	<p>We generally do not consider as Pro AV such items as:</p> <ul style="list-style-type: none"> - Home Theater in a Box - Home Audio Receivers - Cassette players, turntables, etc. - Clock radios, iPods, MP3 players, XM/Sirius receivers, etc. - Boom Boxes, Portable or Under-Counter Radios, TVs, DVD Players etc. - Automotive Electronics - Wireless Speakers - Whole House Audio Systems (residential type) - Any item with the word "Home" in it. 	This specification is for all types of AV products, not just professional products
89	Specification Framework Document	3/31/2009	Thorburn Associates	Derek Mendes	N/A	Energy Savings with Professional Products	<p>As designers for large commercial systems we are increasingly being asked to assist in reducing total energy consumption for equipment within buildings. Organizations such as the US Green Building Councils LEED building rating system have pushed the desire to increase energy efficiencies for the built environment. While I have not seen any good numbers for the costs associated with commercial AV equipment operating within a commercial building, given total energy consumption for commercial buildings exceeds that used by consumers at home I expect the consumption for the products used in the commercial environment could yield reasonable energy savings if attacked across the board with programs such as the energy star specification.</p>	It is for this reason that ENERGY STAR is hoping to include professional products in the specification
90 & 91	Specification Framework Document	3/31/2009	Thorburn Associates	Derek Mendes	N/A	Energy Savings with Professional Products	<p>Most equipment used in professional environments is left on 24 hours a day 365 days a year and does not necessarily have good standby modes to save energy. The matrix listed in the professional category is sorely deficient, basic items that I can think of that are commonly deployed widely in commercial AV systems are video projectors and video displays. These are only mentioned in terms of telepresence systems (a miniscule part of the AV market). Projectors are deployed widely in corporate conference rooms, boardrooms, training rooms, and in K-12 and College and University classrooms to name just a few. Other areas that are missing are AV switchers, wireless microphone receivers, audio Digital Signal Processors (DSP), etc.. I would strongly recommend that the EPA consider acquiring more professional AV representation on this panel and consider reviewing InfoComm or a similar trade groups categories for classifying professional AV equipment.</p> <p>By expanding the professional AV categories to appropriately reflect the broad range of equipment that is deployed in the commercial environment and giving equal weighting for the professional and residential AV equipment I believe this will greatly increase the effectiveness and long range goal of the energy star specification to significantly reduce wasted energy consumption in the United States.</p>	See comment #87
96	Specification Framework Document	4/1/2009	Waveguide Consulting, Inc.	Scott Walker	N/A	Product Categories	<p>Specifically, regarding the categorization proposed in Version 2.0, I believe the cleanest way to incorporate the commercial AV market (valued at more than \$20B in North America) into Energy Star would be to define two primary Energy Star AV categories: residential and commercial. Under each of these two major heading, the appropriate sub-headings can be defined. With respect to the commercial AV market, I would suggest the following categories based on the InfoComm iQ breakdown:</p> <ul style="list-style-type: none"> - Audio Equipment - Audio and Video Conferencing Equipment - Audio Production and Recording - Cameras and Camcorders - Computers Digital Storage Drives - Control Systems and Networking - Digital Signage - Displays and Monitors - Document Cameras and Digital Imaging - Studio Lighting - Power Management - (Motorized) Projection Screens - Video Projectors - Recorders, Players and Duplication - Signal Management and Processing - Streaming Media and Webcasting - Telephony, Data Communications - Test and Measurement Equipment - Video Editing and Production 	See comment #87. Based on EPA's experience to-date, there is no clean break between residential and commercial products. Many products may be used for either application. EPA is looking forward to input from stakeholders to see if there is a way to clearly differentiate these categories.

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101	Specification Framework Document	4/2/2009	Christie Digital Systems	Peter Pekurar	N/A	Product Categories	<p>Categorization of audio / video products by consumer vs commercial is an excellent idea. I believe there is an opportunity to maintain consistency with currently established categorization methods. Organizations such as FCC, IEC and CISPR have already defined guidelines for consumer vs commercial products which are applied in the following manner:</p> <p>Class A devices – commercial products Class B devices – consumer products (usually residential)</p> <p>Applying this categorization scheme will allow consistency with the above industry norms, and will compatible the new EuP regulations for Energy Using Products.</p> <p>I would also like to recommend adopting the following commercial Pro A/V categories which are based on InfoComm iQ.</p>	It is EPA's understanding that class B products can also be used in commercial applications. We would not to promote the use of the wrong class of products for a certain application because of the way ENERGY STAR defines products. Are there other clear definitions you could provide? Also, see the response to comment #87
102	Specification Framework Document	4/6/2009	AVW-TELAV Audio Visual Solutions	Byron Tarry	N/A	Consumer vs. Professional Products	There should be a clear understanding within the development mandate that the intricacies of commercial/professional integration mean hardware requirements differ significantly to those for consumer solutions. Given this, it should not be automatically assumed that power consumption levels set for Consumer devices (ie: Flat Panel displays) should carry over to the professional realm.	EPA is looking for input on the specific features (hardware requirements) that differentiate commercial products and require an additional energy allowance.
103	Specification Framework Document	4/6/2009	AVW-TELAV Audio Visual Solutions	Byron Tarry	N/A	System Controls	Complex professional integration solutions generally incorporate custom control solutions, that through the utilization of bi-directional communication interfaces such as RS-232 or Ethernet ports, are capable of interrogating devices for a variety of information for subsequent consolidated system control, reporting, and display. We would suggest that aside from pure power consumption metrics, any commercial AV Energy Star mandate provides a requirement to provide energy consumption data for any device with a bidirectional communication protocol.	To the extent manufacturers can provide the energy requirements for the bidirectional control feature, EPA welcomes this data.
104	Specification Framework Document	4/6/2009	AVW-TELAV Audio Visual Solutions	Byron Tarry	N/A	Manufacturer Spec Sheets	One of the biggest difficulties we face in product selection is very little information on power consumption statistics on manufacturer's spec sheets. Not sure if this is required in any form for the consumer channel, but I would propose that as a part of the ability to use the Energy Star rating, manufacturers perhaps be required to include select energy consumption measurements on their spec sheets.	EPA will consider building in reporting requirements
105	Specification Framework Document	4/6/2009	AVW-TELAV Audio Visual Solutions	Byron Tarry	N/A	Phased Approach	This is an initiative that is extremely important to get off the ground, however there are a huge number of equipment categories to consider. I would encourage a phased approach to the introduction of the rating system to the commercial arena. Quick wins to get certain key categories in place, particularly those where the consumer rating system can be easily adapted (ie: Flat Panel displays), which will in turn both promote the energy star commercial AV rating system for broader use within the industry, and will provide incentive for manufacturers of those categories outside the initial launch to prepare for and contribute to the subsequent category rollouts.	EPA has a separate specification in place for displays. For AV products not yet covered by ENERGY STAR, EPA plans to create additional specifications as appropriate. EPA is open to considering additional products not yet identified in the AV draft specification documents through a tiered approach.