

**ENERGY STAR Version 2.0 Audio/Video
Final Draft Comment Response**

Topic	Comment	EPA Response
APD	APD of the mechanical power switch use model is very difficult. (In case of CD mini system/ Analog Turntable without remote control) The timer circuit and the control circuit is necessary, and the cost and the power consumption is rise.	EPA has proposed mandatory APD requirements since initial discussions in early 2009. EPA has not received any feedback prior to the final draft that there were any complications implementing APD. For many small audio systems, the majority of savings are based on the ability of the products to power down when not in use. In order to continue allowing ENERGY STAR for all AV products, EPA has left the APD requirement in place.
APD	Strong recommendation to withdraw mandatory APD requirements. This imminent introduction of mandatory APD requirements is not feasible and obtainable at all for manufacturers. As an alternate, recommend delaying the effective date of mandatory APD requirements until Tier 3.	
APD	The design cycle of products is already completed for 2010 models so it is impossible to modify the products at this moment. If it is necessary to redesign products in order to meet the mandatory ENERGY STAR requirement, then manufactures will have to increase costs of reengineering.	The ENERGY STAR levels are only intended to be applicable to the most efficient products. Since EPA has been discussing APD requirements for nearly one year and has not heard of any problems prior to the final draft, the requirements will stay in place.
APD	The proposed APD criteria (30 minutes or less) is not clear and causes confusion to manufactures this may cause to provide incorrect data to qualify as ENERGY STAR products, so we request clarification. Recommend: "APD < 30 minutes: This timing option is acceptable for use as default setting. If APD timing is set to less than or equal to 30 minutes and option is there is no option to disable APD, products do not have to meet Idle state power consumption requirements. If APD timing is set to less than or equal to 30 minutes and if APD can be disabled then products have to meet Idle state power consumption requirements"	EPA has added clarifications in the final version of the specification per this recommendation
APD	It should not be necessary to monitor for the last user input in all cases. Suggest modifying language to: APD (Auto-Power Down): The capability to automatically switch a device from On mode to Sleep mode after a predetermined period of time (APD timing) has elapsed. APD timing begins when the following criteria have been met: (1) the device has ceased performance of all primary functions, or (2) the last user input has been received (e.g. remote control signal, volume adjustment)	EPA has added clarifications in the final version of the specification per this recommendation
APD	In section 3.1a, suggest modifying language to: Mandatory Auto-Power Down: To qualify for ENERGY STAR, all products must offer APD functionality that is enabled by default. APD timing begins after the last user input has been received (e.g. control signal, volume adjustment) or when the product ceases performance of all primary functions.	EPA has added clarifications in the final version of the specification per this recommendation
APD	Recommend: "...and APD timing begins upon loss of signal (LOS) on any of audio/video active AV inputs...."	EPA has added clarifications in the final version of the specification per this recommendation
APD	With regard to APD, recommend having an Auto-Power Down (APD) that detects signals automatically from On mode to Sleep mode functions either one at a time as an audio signal or video signal rather than detection of both signals at the same time. Some audio products do not have the capability to detect a video signal because video input can be selected by using only input selector switching functions. It is burden for manufactures to be able to detect loss of signal (LOS) on all audio/video signals in order for APD timing to start because the video signal switcher IC can detect the display signals only and cannot detect audio signals. Also additional components are required in order to allow audio signals yet add additional costs to the consumer. Having capability to detect both audio and video signal is not feasible because it will cause product to increase energy efficiency and therefore increase cost. Recommend: "The capability to automatically switch a device from On mode to Sleep mode when all of the following criteria have been met: (1) the device has ceased performance of either audio or video signal of primary function...."	EPA wants to ensure that devices power down when they are no longer performing a primary function. The proposed change represents a more conservative approach, so the wording has been modified accordingly (i.e., if you are processing some audio + video signal you only have to sense the video – when the video drops out, the product will APD regardless of whether the audio continues or not). This has been clarified in the final specification.
APD	Recommend clearly defining that the LOS should be considered only if one of conditions is met (either audio signal or video signal, but not both). For instance, consumers will use the picture only for the video recorder products.	LOS should be applicable for all active AV inputs as specified in section 3.1.a. If a product does not accept audio signals, the LOS definition does not apply.

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APD	Recommend using easily obtainable signals for the audio/video signal because they make noise level at 1dB very difficult to measure. The noise level fluctuates depending on the surrounding environment. Also, the noise level may vary depending on the products since high end models provide a more clear quality of sound and have low noise level. Our recommended signal, the horizontal or vertical sync signal, is commonly used among manufactures due to its stability. Recommend: "RCA audio inputs: Loss of either the horizontal or vertical sync signal or disconnect cable from inputs" And "Composition inputs: Loss of either the horizontal or vertical sync signal or disconnect cable from inputs" As an alternate, if the EPA insists using 1dB for RCA audio inputs and Composite inputs, we would like to suggest alternately using an audio signal, minimum output level of 0.2 V rms at 1 Khz, according to IEC 61938, table 2a.	EPA has broadened the definition for loss of signal to accomodate this concern.
APD	"RCA audio input" should be more generic "Analog audio input". Many professional products use alternate connectors for the same function. Need to define LOS for digital signals by TosLink, Coax (RCA), etc. Many professional products use an RJ-45 Ethernet Connection to provide eight digital audio inputs.	EPA has modified the LOS definitions to be more generic in response to this suggestion.
APD	Why cannot other digital control signals (Ethernet, RS-232, etc.) have same status as HDMI with CEC to replace LOS with specific Standby Commends from other equipment? Many professional products will be connected by RS-232 to a Controller that can put the equipment to Sleep and Wake up according to an energy management schedule much the same way a set-back thermostat can lower room temperatures 1 or more times per day. This seems very similar to the functionality provided over HDMI with CEC, only there is much more potential energy to save in a large commercial application than in an individual homes media room.	EPA has made a change which should address this topic. The list in the specification is not meant to be exhaustive or limiting and OEMs can choose to go beyond the specification at any time.
APD	Regarding Composite video signal, "Loss of either the horizontal or vertical sync " are preferable for us . Because detection of 1 dB or less signal are not stable way and not usual manner for us. Sync detection are more stable and familiar way. We think Manufacturer has more experience about this kind of signal detection. From this point of view, we propose allowing manufacturers to determine the detecting condition. Manufacturers should guarantee the EPA's requirement of the APD timing. Because we have many way of detecting the signal. Manufacturers would like to select the detector depending on the circuit design.	EPA has broadened the definition for loss of signal to accomodate this concern.
APD	For loss of signal on HDMI, it makes sense to use the same definition as for DVI. These two interfaces use the same signaling mechanisms, so the TMDS link state is a good way to detect signal state for both interferences. The HDMI spec doesn't require CEC to be implemented and as there are so many legacy HDMI devices that don't or won't have it implemetned, and both ends of the link would need to do so for the current definition to work, this means that few HDMI links would ever count as LOS under this spec. Thus checking TMDC clock rate should also be used for HDMI LOS detection. We suggest the HDMI LOS be changed to: iii) HDMI: Receive <Inactive Source> or <Standby> signal over the CEC channel, or [Power Status] of an upstream device goes to "Standby" or "In Transition to Standby" over the CEC channel -OR- Detection of a disabled TMDS link, a TMDS clock line signal below 22.5 MHz for more than one second, or a TMDS link oeprating outside of the valid frequency range.	EPA will add clarifications in the final version of the specification per this recommendation
APD	A remaining concern we have is with the APD qualification. As currently constructed, the qualification allows for Idle State power consumption to continue in perpetuity. We think it is within the bounds of a consumer's user preference and the ability of industry, to not allow eligibility to products with APD disabling options, and instead have APD limit set at 4 hours. We think this non-disabling APD requirement should be required for the "consumer AV" category Tier 2. For professional/commercial AV products, we think this non-disabling requirement should go into effect for Tier 3.	EPA has made provisions that allow for disabling of APD primarily for commercial products that need to be set up in advance and have the ability to turn on quickly. EPA has set idle limits that allow for consumers to disable APD if that is their preference, but still limit the power consumption if that occurs.
APD	Typo: Should be 30 Minutes < APD < 2 Hours	EPA has fixed this typo in the final specification
Implementation	Based on table 4, consumer products effective date starts with Tier 2, correct?	Consumer AV products previously eligible under the Version 1.0 Audio/DVD specification will have new requirements starting in tier 2. However consumer AV products such as docking stations that were not previously eligible for ENERGY STAR will need to meet new requirements starting in tier 1.
Implementation	My understanding is that it is acceptable to advertise the products as ENERGY STAR qualified products under Version 1.0 / Tier 1 Version 2.0, but not qualified under Version 2.0 even after Tier 2 effective date (July 30,2010) as long as the products were produced prior to Tier 2 effective date,(July 30, 2010).	If a product is manufactured before the effective date of the new requirements, it can carry the ENERGY STAR label. However website references should be modified if the product no longer meets the current ES requirements. If the same product model continues to be manufactured after the new effective date and no longer meets the requirements, any physical product labeling must stop, and any Web sites or other updated advertising/marketing materials can no longer refer to ENERGY STAR.

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Implementation	Is it required to have a new Partner Agreement for Tier 1 of Version 2.0 or the Partner Agreement from Version 1.0 will be still valid until Tier 2 since the requirement itself is the same?	No, the Partner will simply have to check a box on the commitment form and re-submit (no signatory). They do not have to complete a full Partnership Agreement.
Implementation	My understanding is that we do not need to resubmit the models to be qualified under Tier 1, Version 2.0 if the models are already qualified under Version 1.0 which is the same requirements. So please let me know whether we need to resubmit to OPS in order to be qualified as Tier 1 Version 2.0 for the products were already qualified under Version 1.0 or the OPS will carry over automatically for models were already qualified under Version 1.0 so that manufacturers do not need to resubmit?	OPS will automatically roll over V1 products to Tier 1 V2, so those products do not have to be resubmitted.
Idle Power	Where did the 5W Idle power number come from as the optical Blu-ray player data provided shows greater than 10W	The Idle power limit was set at a low level to encourage manufacturers to take advantage of the APD option. A BD player is certainly one of the product types for which ENERGY STAR hopes to encourage short APD timing, since these products are typically left on by consumers after disc playback has been completed.
Idle Power	We would like to request that the EPA study more before it decides to set limits and delay the idle state power consumption limits until Tier 3. Also recommend reconsidering less stringent requirements on the idle state power consumption limits for Tier 2 and Tier 3 if the EPA strongly insists on keeping the idle state power consumption limits as an alternate.	
Idle Power	The Idle State power consumptions can only be reduced to 1 or 2 W, depending on products from On mode power consumption limits with current technology. As indicated from the test data, energy saving in Audio/Video products is insignificant because architecture of system is very different from that of computers and can not reduced to the idle state power consumption drastically from On mode power consumption. For example, motors of a disc drive in a product will be stopped for a video product model in order to reach idle state mode.	
Idle Power	5W limit is very tight. We want to know which kind of product clears this limit. Most AV receivers and HTIB systems can not clear this limit. It will be far from EPA's top 25% target It should be excluded from amplifier product. Because , it can not be decided typical power consumption by all product categories. So, JEITA members would like to exclude idle power limits from audio product until Tier 3. Because, audio product must come up against very tight limit of idle power. Audio product limits should be assessed by more sample data. We found important discrepant limit. Idle limit of audio amplification = 5w + 5W (or Pout*0.1) vs. On mode of optical player = 6W Why on mode is smaller than idle mode ?	The purpose of setting idle state power consumption limits is to allow manufacturers another option if they wish to offer products that can have APD disabled. Products will not need to meet idle requirement if they are set to APD after 30 minutes and cannot be disabled.
Idle Power	Additional comment for Video products; Idle state power consumption are specified by Final draft for all products including consumer video products. However we think this limit is a very tight target for a video product. Because recently DVD or BD player use one chip solution integrated system control and disc drive control. In this case, it is not possible to power down for such controller even Idle mode, similar power consumption are needed between ON mode and idle mode. Because system controller are operating . To have separate twin controller might be one solution to decrease idle mode power consumption, but this is costly. In this sense, we propose to have additional investigation with evaluation of more sample data until Tier 3 before fixing limit.	
Idle Power	We recommend amending the proposed limits in Table 6 so that there are no power consumption limits for optical disc players in Tier 2 and the limits for Tier 3 are as follows: SD Video and Audio Source Optical Disc Player/Recorder 5.0W (player only), 14W (player/recorder); SD Sourced to HD Output "Upconversion" Optical Disc Player 8.0W (player only), 18W (player/recorder); HD Video Source Optical Disc Player/Recorder 13W (player only), 23W (player/recorder)	Based on the test data EPA has reviewed, the current levels set for tier 2 are appropriate for capturing the most energy efficiency products.
On Mode Amp Efficiency	Recommend subtracting On mode power consumption of Audio/Video products with an integrated optical player model rather than subtracting from the total measured power consumption. The suggested statement in line 388 is: "Section 6.3 of the test procedure, may be subtracted from the On Mode Power Consumption of Optical Disc Player/Recorder in Table 4 ..."	The purpose of subtracting the power consumption of the optical disc player from the total power consumption is to account for power used to provide an input signal for purposes of calculating amplifier efficiency. Subtracting the power consumed by the optical disc player from the on mode power consumption limits would not achieve this goal.
On Mode Amp Efficiency	The reasoning that allows special considerations for devices that must meet on mode amplifier efficiency does not offer input terminals should be applied to other combinations of multiple basic functions such as stand-alone DSP and amplifier.	DSPs that are integrated with other product functions such as amplifiers are eligible to qualify for ENERGY STAR under the specified qualification requirements. The option to subtract disc player power is only provided to allow for fair testing of products that cannot accept an AV test input signal via any other means.

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On Mode Power	On Page 14, Section 3.2.d: You fail to recognize amplifiers with built-in IP Networking, Network Audio input, and/or DSP processing. Many commercial amplifiers have IP Networking for control & monitoring. Many commercial amplifiers also have built-in DSP processing, to provide efficient manipulation of the audio signal at the amplifier's input stages. Many commercial amplifiers also have an Audio Network input, to interface to commercial Networked audio sources. I believe the power consumption of the IP Network circuitry, Audio Network circuitry, and Digital Signal Processing should be subtracted from the total measured amplifier power consumption, for amplifier efficiency calculations, just as the optical disc player may be subtracted from amplifiers that have built-in optical disc players.	Based on the test data EPA received during the specification development process, audio amplifiers were grouped into three size categories. The additional overhead expected from features such as DSP is accommodated for in smaller amplifiers, where this overhead is expected to constitute a large proportion of total power consumption.
On Mode Power	The on mode requirements are not fair to all kind of products. The power consumption from optical disc player and or idle power consumption, as measured in Section 4.3.a) should be subtracted from the total power consumption of the device for all audio amplifier efficiency calculations. JEITA members propose "Idle power consumption" or "All optical player power consumption with audio input and without audio input" may be subtracted from total power consumption. "Because, Section 4.3.a)" is included idle power consumption. [20W Pin<100W] Efficiency= Pout/(Pin*0.8-Idle) or Efficiency= Pout/(Pin*0.8-Section 4.3.a)) [Pin 100W] Efficiency= Pout/(Pin-Idle) or Efficiency= Pout/(Pin-Idle-Section4.3.a))	The efficiency requirements for amplifiers have been grouped into three size categories that take overhead power consumption relative to total power consumption into consideration in the efficiency calculation.
On Mode Power	It is very difficult for a DVD(Blu-ray) player system with stereo amplifier to measure efficiency. In the power consumption evaluation, the idle power consumption of the amplifier has been added at the same time.	The protocol for measuring amplifier efficiency is included in sections 7 and 8. The efficiency levels assume overhead consumption of devices. During the amplifier portion of the testing, the blu-ray disc should not need to be run, so only overhead will be required.
On Mode Power	Recommend that the on mode power consumption limit of standard definition optical disc drive should keep the 5W ideal of the version 2.0 proposal. Since EPA released the draft version 2.0 Audio/Video specification, we have re-designed our DVD player solution and we have reached the 5W requirement. This proved that the original 5W standard is possible, if the DVD player maker would like to improve their power consumption. If Energy Star relaxes to 6W for SD and 10W for HD output (SD source), most of DVD players are easy to pass the standard. The Energy Star will be of little value for reducing the power consumption. For the object of protecting environment, we hope EPA keeps the 5W standard as a goal what all strive for. In order to be a popular standard, EPA can relax to accept a 5% tolerance. It means goal is 5W, but relax to 5.25W. For 2012 standard, we can recommend 4.5W with 5% tolerance is reasonable standard. (relax to 4.73W).	The efficiency requirements for amplifiers have been grouped into three size categories that take overhead power consumption relative to total power consumption into consideration in the efficiency calculation.
On Mode Power	The limits for optical discs are unclear. For example, for SD, the limits are written as: 6.0 W (Player Only), 16 W (Player/Recorder) The above appear to be misleading as it appears the actual limits are intended to be: 6.0 W (Playback mode), 16 W (Record Mode)	EPA has added clarifications to the final version of the specification per this recommendation.
On Mode Power	The limits for product function is far beyond the proposed limit and not obtainable at all. (i.e. Home Theater In a Box(HTIB) , Mini Hi-Fi Component System, Micro Hi-Fi Component System, DVD HTIB, Blue-ray Disc HTIB, and others).	EPA developed the Sleep and On mode power consumption limits in this document based on data received from stakeholders during the specification development process. The levels in the specification are believed to be attainable for the top 25% of energy efficient products based on the data received and on EPA's technical assessment.
On Mode Power	DVD HTIBs needs to be excluded from On Mode power consumption limit. DVD HTIB is a HTIB system with an integrated DVD receiver consist of multi channel audio amplifiers, This DVD HTIB will be controlled by one power supply and cannot isolate a DVD player with receiver, independently in order to measure the On power consumption of the SD Optical Disc player.	The specification has been set up to cover products with multiple functions. Turning down the amplifier volume for testing of the disc player function should effectively isolate the DVD player function for purposes of testing.
On Mode Power	IP Networking; Our understanding of some example of IP Networking are WiFi, Ethernet , Bluetooth, etc. If some products have such function (For example, BD player with Ethernet function), how to understand the limits of 1.5w. Is the meaning of additional allowance of power consumption for such products? How about USB. Does it include USB interface in IP Networking? We think some additional description is necessary.	EPA has replaced the IP networking allowance with a generic allowance for Networking / Control Protocol to accommodate Bluetooth, USB, RS-232, or any other communications protocols provided by the vendor.
On Mode Power	On mode power consumption for HTIB is very tight. Most HTIB products could not meet the limit. Optical disk player's power consumption should be excluded until Tier 3 of the audio product. Audio products need bigger power consumption by extra feature function. They need extra power without power amplifier. Audio product limits should be assessed by more sample data. The amplifier addition value of Draft 2 has disappeared. Why did it disappear?	EPA has allowed manufacturers several opportunities to provide additional data to demonstrate the need for more power. However data submissions have been limited and EPA has had to set limits based on technical knowledge of products and available data. The amplifier proposal that complements the draft two proposal is available on the ENERGY STAR Product Development page.

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Other	Optional Add On Amplifier Card for Stand Alone DSP: One of our most recently developed option cards provides a efficient 60 Watt Medium Class D Amplifier to the Stand Alone DSP chassis. This configuration complies with the spirit of A/V specification 2.0 by sharing the same power supply with the Stand Alone DSP, thus avoiding the need for a completely separate chassis with separate losses and power budget overhead. Assuming the Stand Alone DSP meet all EnergySTAR A/V 2.0 specifications, and then the additional load introduced by adding the Medium Amplifier independently meets the Amplifier requirements, could the combination be registered as EnergySTAR compliant following the same reasoning as outlined in the note on line 390 for application of 3.1, d) to a combination Optical Disk reader / Amplifier?	No. The combination product would have to qualify as a single product in order to be qualified as ENERGY STAR. It is not possible to qualify subsystems of a single product separately.
Other	The heading "Excluded Products: on line 272 appears to have lost its numbering "2.2"	EPA has fixed this formatting error in the final specification
Other	Please add a definition for IP Video Tuner	EPA has added clarifications in the final version of the specification per this recommendation
Other	It is not clear if 3.1, b) is intended to bring A/V products powered by EPS into the Scope of the A/V Spec 2.0 or to alert the reader to other EnergySTAR categories for EUP powered by EPS. My preference is that A/V products powered by EPS is included in this specification, since the use of the EnergySTAR logo can be consistent between all A/V products, rather than using the special EUP powered by EPS logo which is not allowed to be placed on product except as a cord tag format.	EPA does not want to include products in this specification if there are no requirements beyond the power supply efficiency. It is inappropriate to use the ES logo on the product that implies efficiencies are beyond the power supply. It is for this reason that EPA created an end-use product category with specific labeling requirements. Further, if the product meets the qualifying product definition in the specification, it is no longer eligible for qualification as an EUP and must qualify under the Audio/Video specification if it is to carry the ENERGYSTAR logo.
Other	"Also excluded are products that include an IP video tuner and are sold or provided outside of a dedicated service contract" - Does this mean a retail connected optical player is excluded, like a profile 2.0 blu-ray player? Which spec does a Blu-ray player with Netflix support fall in to? This spec or the Energy Star Set-top box spec?	EPA plans to consider products with IP video tuners for inclusion in the next revision of the ENERGY STAR set-top box specification. Blu-ray players with IP networking are not currently included in ENERGY STAR. Simple internet connected devices with ability to download non-streaming content are covered under the V2.0 AV specification.
Other	There appear to be some minor errors in the flow chart. Audio & Video Test numbers; Idle Power Table #; On Mode Power Table #; Amp Efficiency Table #	EPA has corrected these references in the final specification.
Other	This flow chart can not reach "END". This comment refers to the fact that after the E* comparison (orange blocks) you never return to the test line.	EPA has modified the flow chart in the final version of the specification per this recommendation
Other	On page 8, Section 1.k.3.ii: the draft states that a "Dedicated Audio DSP Device" "Provides support for RS232 or similar protocol for hard-wired remote control". I disagree with this criteria for three reasons: A) A dedicated DSP device may not require a remote control interface, especially if it has a built-in user interface, or if it is internally programmed, at the factory, to perform a permanent processing function. B) RS232 is an antiquated protocol with minimal support. Ethernet (IP), USB, Firewire, etc. are far more common on modern equipment. None of these protocols are similar to RS232. C) A DSP device may offer a wireless remote control interface in lieu of a hard-wired interface.	EPA has added clarifications in the final version of the specification per this recommendation
Other	The definition of "Full-spectrum Amplifier" should be concrete. We might be confused by the channel quantities. Line207; out put on all channels. Line487; one or two-channel Line641; one or more full-spectrum Line 488 mentions "d) Limited-bandwidth audio amplifier tests (Section 8) shall be performed on any product that offers surround sound multi-channel audio amplification. " The definition of multi-channel audio looks "Limited bandwidth audio". However, some multi-channel of AV receiver have the full spectrum amplifier on all channel. Please support these product.	There is a multiple channel test set up for both Full Spectrum and Limited Bandwidth amplifiers as well as a single channel test for any amplifier type. Please see Appendix B and contact EPA with further questions on how to run and how to apply those to cover your specific product.
Other	We believe that the proposed stringent specifications are not obtainable and will not have top 25% products with ENERGY STAR qualifications in the market since the limits are so stringent that manufacturers will not be able to meet the limits by the effective date. This will be a negative impact on manufacturers, consumer, and ENERGY STAR. The manufacturers can not advertise that products are ENERGY STAR qualified products, and consumer will have limited selections since the major retailers only want to carry ENERGY STAR qualified products, and less ENERGY STAR marks will available on the market .	The purpose of ENERGY STAR is to recognize leadership products that are more efficient than others in the marketplace. EPA has developed the requirements of this specification through an extensive stakeholder process to define those requirements that are obtainable for leadership products. ENERGY STAR is a voluntary standard and is not intended to apply to every product.
Other	We understand HDD feature will be continue to be considered for future specification revisions. However Some Video equipment has multiple functions, which are integrated several storage media drive (e.g. DVD with HDD ,DVD with VCR,BD with HDD etc). If possible, we would like to know future plan to investigate such multiple function including HDD feature.	EPA has included a space in the qualifying product information form for manufacturers to include these features. In addition, we will again request information on these features when collecting data on products to set future levels for version 2.0.
Other	Can we get clarification on the High Res display what types of products does this apply to? Also could we get an example of the use of the equation?	EPA will provide an example of how to use the equation in the specification. The purpose of including this feature was to be inclusive of future AV product functionality,

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Other	the current implementations of CEC protocols are largely subject to design rights held by various CE manufacturers, therefore it is important that any power management protocols mandated for products under any Energy star scheme are technology independent and also free of any licensing fees	EPA will add clarifications in the final version of the specification per this recommendation
Other	We would like to clarify about excluding additional product categories since some product categories are not in the scope of product function. For example, Micro or Mini Hi-Fi Component systems are not in the scope of product functions because these models are CD or DVD player systems with an integrated audio tuner and multi channel audio amplifiers.	Since these products have audio amplification or optical disc drive functions, they are included in this specification.
Other	Can an additional product feature be added if there is an HDMI input function, hard disk included, PVR?	EPA has not received data to support additional power allowances for these functions. However in the QPI form, EPA will be collected information on these types of functionality and plans to consider them in the next revision of the AV specification.
Other	The shift from the 2-mode to the 3-mode power model is a good accomplishment of this spec., but it is not immediately apparent to the casual reader that is what is going on. It appears that you have moved to a 4-state model. Some changes in presentation could make things more clear. For example, rather than put Standby Mode in with the other modes (where it is by alphabetical listing), it should be separated out and listed below the others as a temporary mode to be phased out next year. While its definition seems not what we would like to do, we realize that it needs to stay the same as V1.0.	EPA has added clarifications in the final version of the specification per this recommendation
Other	For Off, the language used seems derivative of the future version of IEC 62301, not the current one as the footnote states. EPA has not been in favor of that new version for the mode definitions, so it seems unnecessary to endorse it. In addition, it is still a draft, not a final revision of the standard, and this spec wisely only references the current version (62301:2005 – V1.0). EPA has worked hard to get consensus around “minimum power mode while connected to mains” as the definition of standby, and this definition of off undermines that. The key to Off is that the only way that you exit an off mode is through a power command, e.g. a manual power control on the device, a remote control power command, or an internal timer (by contrast, sleep modes are exited other ways).	EPA has added clarifications in the final version of the specification per this recommendation
Other	Many organizations want to specify power levels for “minimum power mode” (the most common definition of standby). This should be defined and measured in the test procedures and reported, even though Energy Star has no explicit requirement based on the level. It would be most clear to call this “minimum power level” since in different devices, it may occur in different modes. It could be noted parenthetically that this is commonly known as “standby power”, though under the sleep definition, you note (correctly) that this is also sometimes called standby. Perhaps the best thing to do is to mention neither.	Due to the fact that most AV products are connected to a network and rarely turned off, this specification focuses on reducing power consumption in sleep mode rather than in standby mode. EPA is calling on partners to report fully on power associated with modes covered by this specification but to reduce burden has not added requests for data in modes not addressed by this specification.
Other	The note that is currently lines 195-200 that talks about the intent to use connections for inter-device communication for power control will not be there in the final spec. Is there a way to make some language like this present in a note about future Tiers, in an appendix or other area? We would also like to see this language pushed to stakeholders in the TV, set-top box, and other spaces to ensure that people know this is coming. It will also help us get more traction with HDMI if there is more clear public notice from Energy Star that there is interest in interoperable CEC for power control.	EPA will determine the appropriate place for pursuing inter-device communication outside this final specification.
Other	Other specs label definitions with letters rather than numbers. This is not a problem for meaning, but seems like consistency would be good.	This change has been incorporated into the final specification.
Other	In the document there is variously “Auto Power Down”, “Auto-Power Down”, and “Auto Power-Down”. I would be inclined to have no hyphen, but most important to have internal consistency.	EPA has incorporated auto power down throughout the final specification
Other	The definition of “Standby Mode” should be concrete. If there is not the note (174-176). We might be confused by the meaning between “Sleep mode” and “Standby mode”.	EPA has added clarifications in the final version of the specification per this recommendation
Other	Under the definition for multi-component systems, EPA mentions HTIB as an example of a multi-component system that is a product of several components with separate enclosures. However under the section on excluded product, the notebook indicates that the ENERGY STAR label is intended for stand-alone products, not customized system installations. There is a provision to qualify “products” that are made up of several subcomponents in separate enclosures with independent power supplies (i.e. Home Theater in a Box). Please take care of the definition for multi-component systems	As described in the definition of multi-component systems, HTIB products are included in this version 2.0 specification.

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Sleep Mode	On page 12, Section 3.2.b: Sleep mode power consumption limits are unreasonable for many commercial audio products. This is because commercial audio products use high-performance digital audio convertors, DSP(s), and microprocessors/microcontrollers to achieve professional audio signal quality requirements. Such components require significantly higher power than consumer grade electronic components, even in sleep/standby mode. Also, many commercial audio products have multiple network interfaces: IP Networking for control/status, and dedicated audio networking, such as Cobranet and Ethersound. It is not possible to achieve a 2.0 Watt maximum standby power consumption on such products. More energy is required to detect/wake from additional signal and control sources that commercial products contain.	EPA has included a 2 W allowance for Networking / Control Protocol in the final specification based on stakeholder input to address the higher power needs of these components.
Sleep Mode	Confirm Sleep Mode IP Networking allowance is per Network Connection: 1.0 W base chassis, 2.0 W base chassis with IP Network, 3.0 W base chassis with dual IP Network, etc.	EPA has provided allowances for each active, in-use network connection. This allowance does not apply to network ports or functions that are inactive or disconnected. The additional 2 W provided in this final spec for Networking / Control Protocol should address this concern.
Test Procedure	There are several static and dynamic signals on the IEC 62087 test disks. Suggest specifying the "broadcast loop" if that is intent.	EPA has added clarifications in the final version of the specification per this recommendation
Test Procedure	Some products, for example some HD optical drives, may take longer than 60 seconds to fully turn on. Additional language should be added to allow for these cases. It appears that the idle state value intended to be captured is after the unit has been turned on and is not performing a primary function. This value should not include power on cycles.	EPA has added clarifications in the final version of the specification per this recommendation
Test Procedure	As other test specs have done, need to define a Room ambient temp for the test conditions.	The specification includes test conditions in Appendix B, section 4 via a reference to IEC 62301.
Test Procedure	Section 8 (Test Procedure for Limited-bandwidth Audio Amplifiers) must be clearly stated and also needs to include multi channel audio amplifier testing in addition to single audio amplifier. It is also suggested that a statement be included in order to provide consistency for measurements according to the UL 60065 clause 4.2.4.1. Clause 4.2.4.1: " An apparatus with multiple modes of operation, multiple signal input sources, or both is to be operated using each mode of operation or signal input source separately, or in combination, according to the manufacturer's instructions to produce the maximum power input.	The UL version allows for some product specific modifications in order to stress the amplifier. These modifications make sense in the context of product safety but are not appropriate in the context of energy efficiency.
Test Procedure	We understand that measurement of power consumption must follow Test procedure of Appendix B. On the other hand test procedures for safety regulation (e.g. UL60065 show different manners for measurement condition . As you know, power consumption are indicated on rating label for each products, which are measured by safety regulations. In this case, this indicated power consumptions are not matching to measured data by Appendix B. For example, indication of rating label are 17w , and Energy star's measured data show 14w are happen. We think this is not problem but we would like to confirm for our better understanding . Is our understanding correct?	Yes. The ratings for energy efficiency are intended to reflect the energy consumption during typical use, while safety tests reflect power consumption under stressed conditions. For this reason, it is not appropriate to have the same rating.
Test Procedure	We propose the amplifier system with an integrated optical disc player to be excluded from the optical disc player test in Section 6.	EPA will continue to require that each product function meet ENERGY STAR requirements rather than exempting functions of select products.
Test Procedure	Could you change to "any available AV inputs" from "all". Because we will control each function. However we would like to select audio or video depending on product situation.	EPA has added clarifications in the final version of the specification per this recommendation
Test Procedure	7.1.5 and 7.1.7 are the same test so there is no need for the second.	One of these tests records power at MUP and one at 1/8th MUP. Therefore both tests are necessary.
Test Procedure	The AV 1.0 spec referred to a table that gave the voltage /freq. combinations for a number of countries. Since this spec. may be used internationally, this clause should refer to the previous table and not just the North America voltage/freq.	The specific requirement for testing to only the North America voltage/frequency requirements has been removed from the test procedure. Products must be tested with the voltage/frequency input combinations relevant for each market into which they will be sold.
Test Procedure	End of sentence is missing on line 499	EPA has corrected this error in the final specification.
Test Procedure	Typo. Pink noise is referred to from last draft instead of a 1 kHz sine wave on lines 635 and 638	EPA has fixed this typo in the final specification.
Test Procedure	In the test procedure, under Standby, it says: "Bring the test unit into Standby mode (not Off mode)". Won't some devices have these be the same mode? Is this referencing the Off from this version of the spec, or the previous version? (if there was an Off in that version).	EPA has removed the reference to the Off mode since that is a carryover from the previous specification

**ENERGY STAR Version 2.0 Audio/Video
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Test Procedure	<p>As higher levels of THD are tolerated, audio output power (MUP) and efficiency values will both increase, and will also result in a higher calculated Idle Mode power budget. The same UUT that tests as 50 % efficient at 100 Watts Audio Output and 1 % THD may show results of 60 % efficient at 110 Watts Audio Output and 15 % THD. High quality amplifiers typically are specified as having Max 0.2 to 0.5 % THD, while low cost amplifiers (PC speakers, boombox) may have 1-10 % THD.</p> <p>This may be why Underwriters Laboratories uses defines highest volume just before clipping begins to occur to define MUP. Typically, % THD gradually rises with volume until clipping begins at which point it will begin to increase rapidly. Even inexpensive amplifiers with high % THD throughout their range of volume will display demonstrate the onset of clipping at a specific volume level.</p>	<p>The intention was to define MUP as the point at which the output signal is distorted by 1% since this is the level that EPA used for data collection purposes. EPA intends to revisit this in a future revision.</p>
Test Procedure	<p>It is very difficult for the multi channel amplifier to measure efficiency. When measuring one channel, the power consumption at the other channel idle power consumption is added. It cannot be measured correctly.</p>	<p>The intent of the test procedure is to measure the total power consumption of the amplifier when the reference channel is at 1/8 MUP.</p>