



ENERGY STAR[®] Program Requirements for Telephony

Partner Commitments

Following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacture and labeling of ENERGY STAR qualified products. The ENERGY STAR Partner must adhere to the following partner commitments:

Qualifying Products

1. Comply with current ENERGY STAR Eligibility Criteria, which define performance requirements and test procedures for telephony. A list of eligible products and their corresponding Eligibility Criteria can be found at www.energystar.gov/specifications.
2. Obtain certification of ENERGY STAR qualification from a Certification Body recognized by EPA for telephony prior to associating the ENERGY STAR name or mark with any product. As part of this certification process, products must be tested in a laboratory recognized by EPA to perform telephony product testing.

Using the ENERGY STAR Name and Marks

3. Comply with current ENERGY STAR Identity Guidelines, which define how the ENERGY STAR name and marks may be used. Partner is responsible for adhering to these guidelines and ensuring that its authorized representatives, such as advertising agencies, dealers, and distributors, are also in compliance. The ENERGY STAR Identity Guidelines are available at www.energystar.gov/logouse.
4. Use the ENERGY STAR name and marks only in association with qualified products. Partner may not refer to itself as an ENERGY STAR Partner unless at least one product is qualified and offered for sale.
5. Provide clear and consistent labeling of ENERGY STAR qualified telephony products.
 - 5.1. Partner shall adhere to the following product-specific commitments regarding use of the ENERGY STAR certification mark on qualified products:
 - 5.1.1. Partner must use the ENERGY STAR mark in all of the following ways:
 - 1) Via permanent or temporary label on top or front of the product.
 - 2) In product literature (e.g., user manuals, specification sheets, etc.); and
 - 3) On product packaging/boxes for products sold at retail.
 - 5.1.2. If additional information about the ENERGY STAR program or other products is provided by the Partner on its website, Partner must comply with the ENERGY STAR Web Linking Policy, which can be found at www.energystar.gov/partners;

Verifying Ongoing Product Qualification

6. Participate in third-party verification testing through a Certification Body recognized by EPA for telephony products.
7. Comply with tests that EPA/DOE may conduct at its discretion on products that are referred to as ENERGY STAR qualified. These products may be obtained on the open market, or voluntarily supplied by Partner at the government's request.

Providing Information to EPA

8. Provide unit shipment data or other market indicators to EPA annually to assist with creation of ENERGY STAR market penetration estimates, as follows:
 - 8.1. Partner must submit the total number of ENERGY STAR qualified telephony products shipped in the calendar year or an equivalent measurement as agreed to in advance by EPA and Partner. Partner shall exclude shipments to organizations that rebrand and resell the shipments (unaffiliated private labelers).
 - 8.2. Partner must provide unit shipment data segmented by meaningful product characteristics (e.g., type, capacity, presence of additional functions) as prescribed by EPA.
 - 8.3. Partner must submit unit shipment data for each calendar year to EPA or an EPA-authorized third party, preferably in electronic format, no later than March 1 of the following year.Submitted unit shipment data will be used by EPA only for program evaluation purposes and will be closely controlled. Any information used will be masked by EPA so as to protect the confidentiality of the Partner;
9. Report to EPA any attempts by laboratories or Certification Bodies (CBs) to influence testing or certification results or to engage in discriminatory practices.
10. Notify EPA of a change in the designated responsible party or contacts within 30 days using the My ENERGY STAR Account tool (MESA) available at www.energystar.gov/mesa.

Performance for Special Distinction

In order to receive additional recognition and/or support from EPA for its efforts within the Partnership, the ENERGY STAR Partner may consider the following voluntary measures, and should keep EPA informed on the progress of these efforts:

- Provide quarterly, written updates to EPA as to the efforts undertaken by Partner to increase availability of ENERGY STAR qualified products, and to promote awareness of ENERGY STAR and its message.
- Consider energy efficiency improvements in company facilities and pursue benchmarking buildings through the ENERGY STAR Buildings program.
- Purchase ENERGY STAR qualified products. Revise the company purchasing or procurement specifications to include ENERGY STAR. Provide procurement officials' contact information to EPA for periodic updates and coordination. Circulate general ENERGY STAR qualified product information to employees for use when purchasing products for their homes.
- Feature the ENERGY STAR mark(s) on Partner website and other promotional materials. If information concerning ENERGY STAR is provided on the Partner website as specified by the ENERGY STAR Web Linking Policy (available in the Partner Resources section of the ENERGY STAR website), EPA may provide links where appropriate to the Partner website.
- Ensure the power management feature is enabled on all ENERGY STAR qualified displays and computers in use in company facilities, particularly upon installation and after service is performed.
- Provide general information about the ENERGY STAR program to employees whose jobs are relevant to the development, marketing, sales, and service of current ENERGY STAR qualified products.
- Provide a simple plan to EPA outlining specific measures Partner plans to undertake beyond the program requirements listed above. By doing so, EPA may be able to coordinate, communicate, and/or promote Partner's activities, provide an EPA representative, or include news about the event in the ENERGY STAR newsletter, on the ENERGY STAR website, etc. The plan may be as simple as providing a list of planned activities or milestones of which Partner would like EPA to be aware. For example, activities may include: (1) increasing the availability of ENERGY STAR qualified products by converting the entire product line within two years to meet ENERGY STAR guidelines; (2) demonstrating the economic and environmental benefits of energy efficiency through special in-store displays twice a year; (3) providing information to users (via the website and user's manual) about

energy-saving features and operating characteristics of ENERGY STAR qualified products; and (4) building awareness of the ENERGY STAR Partnership and brand identity by collaborating with EPA on one print advertorial and one live press event.

- Join EPA's SmartWay Transport Partnership to improve the environmental performance of the company's shipping operations. The SmartWay Transport Partnership works with freight carriers, shippers, and other stakeholders in the goods movement industry to reduce fuel consumption, greenhouse gases, and air pollution. For more information on SmartWay, visit www.epa.gov/smartway.
- Join EPA's Climate Leaders Partnership to inventory and reduce greenhouse gas emissions. Through participation, companies create a credible record of their accomplishments and receive EPA recognition as corporate environmental leaders. For more information on Climate Leaders, visit www.epa.gov/climateleaders.
- Join EPA's Green Power Partnership. EPA's Green Power Partnership encourages organizations to buy green power as a way to reduce the environmental impacts associated with traditional fossil fuel-based electricity use. The partnership includes a diverse set of organizations including Fortune 500 companies, small and medium businesses, government institutions as well as a growing number of colleges and universities. For more information on Green Power, visit www.epa.gov/greenpower.



ENERGY STAR® Program Requirements Product Specification for Telephony

Eligibility Criteria Draft Version 2.2

1 Following is the Version 2.2 ENERGY STAR Product Specification for Telephony. A product shall meet all
2 of the identified criteria if it is to earn the ENERGY STAR.

3 **1 DEFINITIONS**

4 A) Product Types:

5 1) Cordless Telephone: A commercially available electronic product with a base station and a handset
6 whose purpose is to convert sound into electrical impulses for transmission. The charging base of a
7 cordless telephone or its external power supply are designed to plug into a wall outlet, and there is
8 no physical connection between the portable handset and the phone jack.

9 2) Additional Handset: A commercially available electronic product with a handset, charging base and
10 battery, designed for use with multi-handset cordless telephones.

11 3) Answering Machine: A commercially available electronic product, also known as a telephone
12 answering device (TAD), whose purpose is to provide analog or digital storage of outgoing and
13 incoming telephone messages by connecting to the telephone line between a phone and phone
14 jack. An answering machine or its power supply are designed to plug into a wall outlet.

15 4) Combination Cordless Telephone/Answering Machine (Combination Unit): A commercially
16 available electronic product in which a cordless telephone and answering machine are combined
17 into a single unit, and which meets all of the following criteria:

18 a) the answering machine is included in the base station of the cordless telephone;

19 b) it is not possible to measure the power consumption of the two components separately
20 without removal of the telephone casing;

21 c) the combination unit is connected to a wall outlet through a single power cable or external
22 power supply.

23 d) there is no physical connection between the portable handset and the phone jack.

24 5) Cellular Telephone: A commercially available electronic product that does not use a phone jack but
25 instead uses radio waves to connect to a cellular telephone network.

26 6) Corded Telephone: A commercially available electronic product that provides the same services as
27 a cordless telephone, except that there is a physical connection between the handset and the jack.
28 This definition includes the combination of a corded telephone and answering machine in a single
29 unit.

30

31 B) Operational Modes:

32 1) Standby Mode: The lowest power consumption mode which cannot be switched off (influenced) by
33 the user and that may persist for an indefinite time when an appliance is connected to the main
34 electricity supply and used in accordance with the manufacturer's instructions. Standby Mode is the
35 condition in which a telephony product is connected to a power source and is inactive (i.e., the unit
36 is not transmitting a conversation or recharging a low battery). Standby mode for a TAD occurs
37 when the device is idle.

38 2) Active Mode: The power mode in which the product is connected to a power source and is
39 transmitting telephone conversation, and/or playing/recording a message, and/or supplying current
40 to charge a battery.

41 C) External Power Supply (EPS): A component contained in a separate physical enclosure external to the
42 telephony product casing and designed to convert line voltage ac input from the mains to lower dc
43 voltage(s) for the purpose of powering the telephony product. An external power supply shall connect to
44 the telephony product via a removable or hard-wired male/female electrical connection, cable, cord or
45 other wiring.

46 D) Spread Spectrum Technology (SST): A communication technique whereby the carrier frequency of a
47 signal is automatically and rapidly changed to provide enhanced transmission range, extendable
48 portable numbers, and additional security. This definition includes direct sequence (e.g., digital spread
49 spectrum or DSS) and frequency hopping.

50 E) Multi-Handset Technology: A cordless telephone or combination unit that can support multiple
51 additional handsets.

52 F) Product Family: A group of product models that are (1) made by the same manufacturer, (2) subject to
53 the same ENERGY STAR qualification criteria, and (3) of a common basic design. Product models
54 within a family differ from each other according to one or more characteristics or features that either (1)
55 have no impact on product performance with regard to ENERGY STAR qualification criteria, or (2) are
56 specified herein as acceptable variations within a product family. For Telephony, acceptable variations
57 within a product family include:

58 1) Color, or

59 2) Housing

60 **2 SCOPE**

61 **2.1 Included Products**

62 2.1.1 The following product types, as defined in Section 1, are eligible for ENERGY STAR qualification,
63 including both analog and digital devices operating at any frequency, and excluding the product
64 types listed in Section 2.2:

65 i. Additional Handsets,

66 ii. Answering Machines (with optional SST),

67 iii. Cordless Telephones (with optional SST and/or Multi-handset), and

68 iv. Combination Units (with optional SST and/or Multi-handset).

69

70 **2.2 Excluded Products**

71 2.2.1 The following product types, as defined in Section 1, are not eligible for ENERGY STAR
72 qualification under this specification:

73 v. Cellular Telephones, and

74 vi. Corded Telephones.

75 **3 QUALIFICATION CRITERIA**

76 **3.1 Significant Digits and Rounding**

77 3.1.1 All calculations shall be carried out with actual measured or observed values. Only the final result
78 of a calculation shall be rounded. Calculated results shall be rounded to the nearest significant
79 digit as expressed in the corresponding specification limit.

80 3.1.2 Unless otherwise specified, compliance with specification limits shall be evaluated using exact
81 values without any benefit from further rounding.

82 **3.2 General Requirements**

83 3.2.1 External Power Supply: If the product is shipped with an EPS, the EPS shall meet the level V
84 performance requirements under the International Efficiency Marking Protocol in active mode.
85 Additional information on the Marking Protocol is available at www.energystar.gov/powersupplies.

86 **3.3 Standby Mode Requirements**

87 3.3.1 Measured Standby Mode power, including any power consumed by an EPS, shall be less than or
88 equal to the Maximum Standby Mode Power Requirement, as specified in Table 1.

89 **Table 1: Maximum Standby Mode Power Requirements**

Product Category	Maximum Standby Mode Power Requirement (watts)
<ul style="list-style-type: none">• Additional Handset	1.0
<ul style="list-style-type: none">• Answering Machine• Answering Machine with SST• Cordless Telephone• Cordless Telephone with SST• Cordless Telephone with Multi-Handset• Cordless Telephone with Multi-Handset and SST	2.0
<ul style="list-style-type: none">• Combination Unit• Combination Unit with SST• Combination Unit with Multi-Handset• Combination Unit with Multi-Handset and SST	2.5

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91

92 **4 TESTING**

93 **4.1 Test Methods**

94 4.1.1 When testing Telephony products, the test methods identified in Table 2 shall be used to determine
95 ENERGY STAR qualification.

96 **Table 2: Test Methods for ENERGY STAR Qualification**

Product Type	Test Method
All	ENERGY STAR Test Method for Telephony, Rev. Aug-2010

97 **4.2 Number of Units Required for Testing**

98 4.2.1 Representative Models shall be selected for testing per the following requirements:

- 99 i. For qualification of an individual product model, a product configuration equivalent to that
100 which is intended to be marketed and labeled as ENERGY STAR is considered the
101 Representative Model;
- 102 ii. For qualification of a product family, any product configuration within the family may be
103 considered the Representative Model.

104 4.2.2 A single unit of each Representative Model shall be selected for testing. If test results for any
105 operational mode power measurement are within 10% of ENERGY STAR requirements, two
106 additional units of the same Representative Model with an identical configuration shall be tested.

107 4.2.3 All tested units shall meet ENERGY STAR qualification requirements.

108 **4.3 International Market Qualification**

109 4.3.1 Products shall be tested for qualification at the relevant input voltage/frequency combination for
110 each market in which they will be sold and promoted as ENERGY STAR.

111 **5 EFFECTIVE DATE**

112 5.1.1 Effective Date: The Version 1.2 ENERGY STAR Telephony specification shall take effect on the
113 date specified in Table 3. To qualify for ENERGY STAR, a product model shall meet the ENERGY
114 STAR specification in effect on its date of manufacture. The date of manufacture is specific to each
115 unit and is the date (e.g., month and year) on which a unit is considered to be completely
116 assembled.

117 5.1.2 Future Specification Revisions: EPA reserves the right to change this specification should
118 technological and/or market changes affect its usefulness to consumers, industry, or the
119 environment. In keeping with current policy, revisions to the specification are arrived at through
120 stakeholder discussions. In the event of a specification revision, please note that the ENERGY
121 STAR qualification is not automatically granted for the life of a product model.

122

Table 3: Specification Effective Dates

Effective Date
November 1, 2008

123



ENERGY STAR[®] Program Requirements Product Specification for Displays

Test Method

1 OVERVIEW

2 The following test method shall be used for determining product compliance with requirements in the
3 ENERGY STAR Eligibility Criteria for Telephony.

2 APPLICABILITY

5 ENERGY STAR test requirements are dependent upon the feature set of the product under evaluation.
6 The following guidelines shall be used to determine the applicability of each section of this document:

- 7 ▪ The Standby Mode test procedure in Section 6 shall be performed on all products.

3 DEFINITIONS

9 Unless otherwise specified, all terms used in this document are consistent with the definitions in the
10 ENERGY STAR Eligibility Criteria for Telephony.

4 TEST SETUP

- 12 A) Test Setup and Instrumentation: Test setup and instrumentation for all portions of this procedure shall
13 be in accordance with the requirements of IEC 62301, Ed. 1.0, "Measurement of Household
14 Appliance Standby Power", Section 4, "General Conditions for Measurements", unless otherwise
15 noted in this document. In the event of conflicting requirements, the ENERGY STAR test method
16 shall take precedence.
- 17 B) AC Input Power: Products intended to be powered from AC mains shall be connected to an external
18 power supply (if applicable) and then connected to a voltage source appropriate for the intended
19 market, as specified in Table 1.

Table 1: Input Power Requirements

Market	Voltage	Voltage Tolerance	Maximum Total Harmonic Distortion	Frequency	Frequency Tolerance
North America, Taiwan	115 Vac	+/- 1.0 %	2.0 %	60 Hz	+/- 1.0 %
Europe, Australia, New Zealand	230 Vac	+/- 1.0 %	2.0 %	50 Hz	+/- 1.0 %
China	220 Vac	+/- 1.0 %	2.0 %	50 Hz	+/- 1.0 %
Japan	100 Vac	+/- 1.0 %	2.0 %	50 Hz and 60 Hz	+/- 1.0 %

- 21 C) Ambient Temperature: Ambient temperature shall be from 18 °C to 28 °C.
- 22 D) Relative Humidity: Relative humidity shall be from 10% to 80%.
- 23 E) Power Meter: Power meters shall possess the following attributes:
- 24 1) Crest Factor: Capability to measure the current waveform without clipping.
- 25 i) The peak of the current waveform measured during Standby Mode shall determine the crest
- 26 factor rating requirement and the appropriate current range setting.
- 27 ii) The full-scale value of the selected current range multiplied by the crest factor for that range
- 28 shall be at least 15% greater than the peak current.
- 29 2) Bandwidth: Minimum bandwidth as determined by an analysis of current and voltage to determine
- 30 the highest frequency component (harmonic) with a magnitude greater than 1% of the
- 31 fundamental frequency under the test conditions.
- 32 3) Minimum Frequency Response: 3.0 kHz
- 33 4) Minimum Sampling Frequency: 60 Hz
- 34 5) Minimum Resolution:
- 35 i) 0.01 W for measurement values less than 10 W;
- 36 ii) 0.1 W for measurement values from 10 W to 100 W; and
- 37 iii) 1.0 W for measurement values greater than 100 W.
- 38 F) Measurement Accuracy:
- 39 1) Power measurements with a value greater than or equal to 0.5 W shall be made with an
- 40 uncertainty of less than or equal to 2% at the 95% confidence level.
- 41 2) Power measurements with a value less than 0.5 W shall be made with an uncertainty of less than
- 42 or equal to 0.01 W at the 95% confidence level.
- 43

44 **5 TEST CONDUCT**

- 45 A) As-shipped Condition: The UUT shall be in new condition, and shall be tested in its “as-shipped”
46 condition.
- 47 B) Battery-powered Products: If the UUT contains rechargeable batteries, or can be integrated with
48 another device that contains rechargeable batteries, all batteries shall be fully charged prior to the
49 start of testing and shall remain in place for the duration of testing.
- 50 C) Measurement Location: All power measurements shall be taken at a point between the ac power
51 source and the UUT.

52 **6 PRE-TEST UUT INITIALIZATION**

- 53 A) Prior to the start of testing, the UUT shall be initialized as follows:
- 54 1) Set up the UUT in accordance with its instructions for use, except where these conflict with the
55 requirements of the ENERGY STAR Product Specification. If no instructions for use are
56 available, then factory or “default” settings shall be used.
 - 57 2) If the UUT includes rechargeable batteries, ensure that all batteries are in a fully-charged state.
 - 58 3) Connect the UUT to an external phone jack, if it has a phone line connection.
 - 59 4) Configure the UUT to its factory default settings.
 - 60 5) Connect the UUT to the test equipment.
 - 61 6) Power on all test equipment and properly adjust operation range.
 - 62 7) Set the power meter current range to a value greater than the peak current reading from the
63 oscilloscope divided by the crest factor rating of the meter.
 - 64 8) Wait for 15 minutes, or until the unit has completed initialization and is ready for use.
 - 65 9) Measure and record the ac input voltage and frequency.
 - 66 10) Measure and record the test room ambient temperature.

67 **7 STANDBY MODE TEST**

- 68 1) Place the UUT in Standby Mode.
- 69 2) Wait for at least 30 minutes to allow the UUT to reach operating temperature.
- 70 3) Measure and record Standby Mode power in watts over a period of not less than 2 hours.
 - 71 i. If the UUT has different Standby Modes that can be manually selected, the measurement
72 shall be taken with the device in the most power consumptive Standby Mode.
 - 73 ii. If the UUT has different Standby Modes that are cycled through automatically, the
74 measurement period shall be of sufficient duration to obtain a true average power that
75 includes all modes.