



August 23, 2012

Mr. Paul Karaffa
ENERGY STAR Product Development
U.S. Environmental Protection Agency
Energy Star for Office Equipment
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Proposed Energy Star Program Requirements, Product Specification for
Telephony Test Method, Rev. May-2012

**TELECOMMUNICATIONS
INDUSTRY ASSOCIATION**

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Dear Mr. Karaffa:

We are pleased to provide the following additional industry input regarding proposed Energy Star program requirements for telephony. Our comments include a proposed test procedure including appropriate testing intervals as well as additional information on industry terminology appropriate to the test procedure.

TESTING PROCEDURE/INTERVALS

Version 3.0 proposed a five minute test interval. Some phone systems will charge in intervals that would make the proposed 5 minute test interval in Version 3.0 lead to an inaccurate result. For example, for certain DECT phones, the phone will periodically go into a charging mode for a 10 minute interval. Testing energy usage solely within that 10 minute charging interval would lead to over reporting the standby energy usage of the telephone system. TIA recommends that the 5 minute interval be reconsidered to take into account the intervals of telephone activity. Not all phone systems utilize a fixed charge cycle. For some products, the charge cycle is reset once the portable is removed from the charging cradle or base unit. The time that products spend charging depends on the time out of the charge cradle. Because of this, an accurate testing procedure will require some specific timings to avoid the case where the handset is out of the cradle an unspecified amount of time prior to the testing. For example, even with a fully charged battery, the charge time that occurs when the handset is placed back in the cradle may be different if the handset is out of the cradle for one minute versus one hour.

TIA suggests the following test procedure for cordless phones:

1. To ensure the EUT is in a reproducible starting condition, place the handset with a fully charged battery in the charge cradle for 2 hours prior to beginning the testing. Alternatively, place the handset in the charge cradle for 24 hours prior to the start of testing to ensure both that the battery is fully charged and that the starting condition is reproducible.
2. Remove the handset from the cradle for no longer than 1 minute to go off-hook, check for the presence of dial tone, go back on hook, and return the handset to the cradle.
3. Wait 10 minutes.
4. Measure the average on-hook power consumption for a period of 2 hours.
5. Remove the handset from the cradle, go off-hook to receive dial tone, place a call to another phone, and ensure that a communication path exists between the two phones.
6. Wait 5 minutes.
7. Measure the average off-hook power consumption for a period of 10 minutes.

8. Go back on-hook and replace the handset in the charge cradle.

Note: Steps 1-4 cover the on-hook test in Clause 6.2 of the proposed test procedure. Steps 5-8 cover the off-hook tests in Clause 6.3.

TELEPHONY TERMS/DEFINITIONS

Some of the terms and definitions utilized in the Version 3.0 proposal are unnecessary and/or create confusion as they do not match up with commonly used telecommunications industry terminology. Based on the tests the EPA is proposing be made, TIA recommends that the simple answer would be to just use the two terms associated with the primary states of the telephone, namely on-hook and off-hook. In Clause 6.2 of the proposed test procedure, the EPA is calling for an on-hook test. In Clause 6.3 they are calling for an off-hook test. The process described of going off-hook in Clause 6.2 to determine if dial tone is present and then going back on-hook for the measurement can still be done using the on-hook and off-hook definitions. Likewise the procedure in Clause 6.3 that calls for going off-hook, verifying there is dial tone, placing a call, and then measuring energy usage while off-hook can also be accomplished with just those two definitions for the state of the telephone.

In general, the telephone will be in one of two states; it is either on-hook or it is off-hook. For example, the following definitions are taken from Clause 3.2 of ANSI/TIA-470.110-C, *Telecommunications – Telephone Terminal Equipment – Handset Acoustic Performance Requirements for Analog Terminals*:

CPE State: The condition of the telephone device. It can be either On-Hook or Off-Hook.

Off-Hook: The state of the CPE when the hook-switch is closed. Refers to the state of a particular CPE rather than the line state.

On-Hook: The state of the CPE when the hook-switch is open. Refers to the state of a particular CPE rather than the line state.

The following information is being provided for completeness in response to EPA's request for commonly used definitions concerning telephony operating states. It is not essential for inclusion in the test procedures document. The ATIS network interface standard ATIS-0600401.2006 (formerly T1.401-2000), *Telecommunications – Network to Customer Installation Interfaces – Analog Voicegrade Switched Access Lines Using Loop-Start and Ground-Start Signaling*, enumerates several possible states for the customer installation. Clause 6.2 of that standard identifies the various states and the subsequent 6.N clauses describe the network and customer installation characteristics for each of the states. Again, there are two primary states, but there are also several states that are short-term and transitory in nature that are not relevant to the proposed Energy Star testing procedure. The following states are identified in the document (the descriptions for each are paraphrased from the longer descriptions that it provides):

Primary States

Idle: The network is applying DC voltage to the telephone line and all of the equipment connected to the line is in the on-hook state.

Communication: At least one of the pieces of equipment connected to the telephone line is off-hook and drawing current from the line. The network is providing a communication path for the transmission of voice signals to the far end party.

Transitory States Associated with Originating an Outgoing Call

Service Request: The state begins when one of the pieces of equipment connected to the telephone line goes off-hook and ends when the network provides dial tone.

Addressing: The state begins when the network supplies dial tone and ends when the network determines that complete address information (i.e., the complete phone number) has been received, that the address information received is in error (e.g., an attempt was made to place a long distance call without dialing 1 first), or the equipment went back on-hook without completing dialing. Thus, this is the state in which a telephone is off-hook and someone is using it to dial a number.

Call Processing: The state begins when the network determines addressing (dialing) is complete or in error and ends when the network detects an answer signal from the called (far end) party or the network provides call progress signals, announcements, or both to the calling party indicating the call cannot be completed (e.g., busy signal, error message announcement). In general, the telephone is off hook after dialing is completed and the user is waiting to be connected to the far end party.

Transitory States Associated with Receiving an Incoming Call

Alerting: The network applies a ringing signal to the telephone line while all of the equipment connected to the line is on-hook. The state ends when one of the pieces of equipment goes off-hook or when the network removes the ringing signal because the call has gone unanswered and the calling party has hung up. The phones are on-hook and ringing.

Answer: The state begins when one of the pieces of equipment connected to the telephone line goes off-hook and ends when the network establishes a communication path to the calling party.

TIA appreciates the opportunity to comment on the test procedure for telephony and looks forward to continuing to work with the EPA and the DOE on this issue moving forward.

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