

WHITESSELL CONSULTING LLC

Telephony Standards & Regulations

July 15, 2013

Mr. Paul Karaffa
Product Manager
ENERGY STAR for Telephony
U.S. Environmental Protection Agency
Office of Air and Radiation
Washington, DC 20460

Dear Mr. Karaffa:

Whitesell Consulting LLC provides consulting services regarding standards and regulatory matters to parties in the telecommunications industry. The president and managing member of this limited liability company has over forty years of experience in the field, is a frequent contributor to standards development and industry input on regulatory matters, and has a long history of involvement with the EPA's ENERGY STAR Telephony Program.

Whitesell Consulting LLC has taken a look at the dataset for cordless telephones (both with and without integrated digital answering devices), which is available on the Telephony Specification Version 3.0 web page, and believes there is a major problem with the proposed 0.9 W limit for cordless phones. The following discussion outlines the reason for this concern.

The dataset has input from only one manufacturer (Manufacturer B) for cordless phones. It includes 21 samples that are identified as "Cordless". Of those, 17 are "combination" units with integrated telephone answering devices (ITADs) and 4 are just cordless phones. Some of the samples have the same model number, so there appears to be only 10 unique models.

The important information from Manufacturer B's contributed data is that the phones showed an average increase in Partial On power of 0.44 W when tested with additional handsets active in the system as compared to testing without additional handsets. The minimum increase was 0.36 W, and the standard deviation was 0.08 W. (See Annex A for analysis). Although the presenters at last week's webinar did not give quantitative details, they made a point that the revised Draft 3 of the Version 3.0 test procedures call for extra handsets in the system to be active because it does make a difference.

Most of the data in the dataset comes from currently qualified products. There are 497 combination units with integrated answering devices and 174 plain cordless phones. If we only consider the data as presented, the 0.9 W proposed limit would be met by 139 of the combination units (28.0 %) and 38 of the plain cordless units (21.8 %). The aggregate numbers are 177 out of 671 units, or 26.4 %. This is in line with the EPA's stated objective of having 25 % of products complying. The minimum reported standby power usage for any of these products is 0.55 W. [There is one product included in the list of

Combination Units showing a standby power of 0.27 W, but a check of the model number (Panasonic KX-TG840C) suggests that this unit is mislabeled and should be included in the Additional Handset list.]

However, the data for these qualified products is for Standby (Partial On) power measurements made without additional handsets active in the system. That is, the current Telephony 2.2 test procedures do not require additional handsets to be active in the system when testing the base unit and its handset. If the 0.44 W increase in power noted by Manufacturers B is applied to the standby power data for the current qualified products, then the minimum partial on power would be expected to be 0.99 W (0.55 + 0.44), and NONE of the products would meet the proposed 0.9 W limit.

If the EPA is going to use the current qualified product data, it needs to allow for the increase in power when multiple handsets are active in the system. Setting the limit at 1.4 W (0.9 + 0.44, rounded up) would only allow 3 of the 20 samples (14.3 %) from Manufacturer B to pass. If the limit were set at 1.3 W (0.9 + 0.44, rounded down) then none of the 21 samples would pass.

A more reasonable approach would be to set the limit at 1.5 W. This number comes about from adding an allowance equal to the mean plus two standard deviations for the multiple handset power increase to the previously proposed 0.9 W limit based on the Standby power data for currently qualified products. If an allowance is only made for the mean power increase, then the allowance is going to be insufficient half of the time. [Note that setting the limit at 1.5 W would still only yield a 14.3 % pass for the 21 samples from Manufacturer B. Such is the issue with small sample sizes. Hopefully, the yield will be closer to 25 % for a larger sample size.]

Sincerely,


Stephen R Whitesell
President and Managing Member
Whitesell Consulting LLC

Annex A

Analysis of Manufacturer B Data for Cordless Telephones
from Tab 1 of Version 3 Telephony Specification Dataset

Manufacturer B Products		ITAD	Partial On Power		Power Diff
			w/o Hdst	w/ Hdst	
Cordless	Model 16	Yes	1.68	2.08	0.40
Cordless	Model 17	Yes	1.66	2.06	0.40
Cordless	Model 17	Yes	1.63	2.03	0.40
Cordless	Model 17	Yes	1.62	2.02	0.40
Cordless	Model 17	Yes	1.60	2.00	0.40
Cordless	Model 18	No	1.10	1.57	0.47
Cordless	Model 18	No	1.09	1.56	0.47
Cordless	Model 18	No	1.07	1.54	0.47
Cordless	Model 19	Yes	2.02	2.62	0.60
Cordless	Model 19	Yes	2.00	2.60	0.60
Cordless	Model 20	Yes	0.85	1.39	0.54
Cordless	Model 21	Yes	0.85	1.39	0.54
Cordless	Model 22	Yes	0.83	1.37	0.54
Cordless	Model 24	Yes	1.65	2.02	0.37
Cordless	Model 24	Yes	1.62	1.99	0.37
Cordless	Model 24	Yes	1.32	1.68	0.36
Cordless	Model 25	Yes	1.63	2.02	0.39
Cordless	Model 25	Yes	1.63	2.00	0.37
Cordless	Model 25	Yes	1.61	1.99	0.38
Cordless	Model 25	Yes	1.59	1.97	0.38
Cordless	Model 27	No	1.05	1.52	0.47
		Mean	1.43	1.88	0.44
		Std Dev	0.36	0.35	0.08