



# WHY CERTAIN TELEPHONES NEED AN EXEMPTION UNTIL JULY 2008 FOR COMPLIANCE TO THE CEC RULES

Jim Haynes

Uniden America Corporation

[www.CE.org](http://www.CE.org)

# Recap of the CEA Presentation before the California Energy Commission (October 2005)

- Consumer Telephones, (cordless and corded), telephone answering machines, and modems, connect simultaneously to the metallic telephone circuit and commercial electrical service.
- This connection is typically 24/7 as opposed to many other external power supplies that are disconnected after usage.



[www.CE.org](http://www.CE.org)



# Early Cordless Telephones

- Most Cordless Telephones connected directly to a standard electrical outlet



**Circa 1978 to 1980**



**Circa 1981 to 1984**

# Current Cordless Telephone

- Most all models today utilize an external power supply for providing electrical power to the base unit and for charging the handset batteries.



Uniden ELBT595

# Modems, Routers, and other IT Peripheral Devices

- Most of the devices that are used as accessories with personal computers are connected to commercial electrical service via a multi-outlet power strip.
- Most of the power strips used for multiple electrical connection of IT accessories have surge protection as a feature.



# LISTING FOR SAFETY COMPLIANCE

- All Uniden cordless telephones are investigated for UL compliance.
- All Uniden cordless telephones are authorized to display the UL Listing mark
- UL Listing is an assurance that the listed device will not become a fire hazard or risk of electrical shock, even in abnormal conditions.



[www.CE.org](http://www.CE.org)

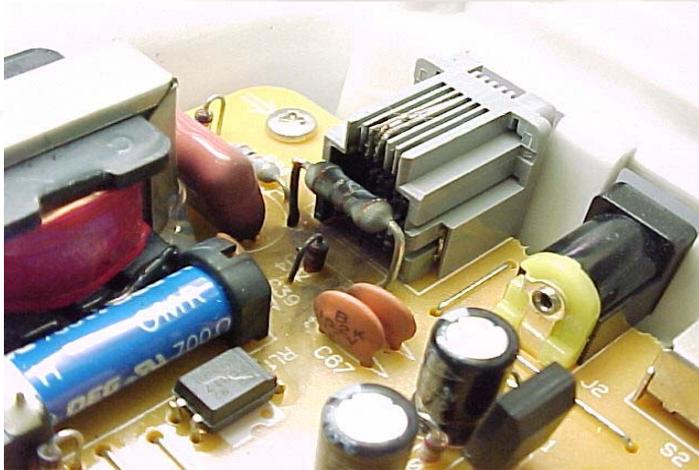


# Service Return Problem

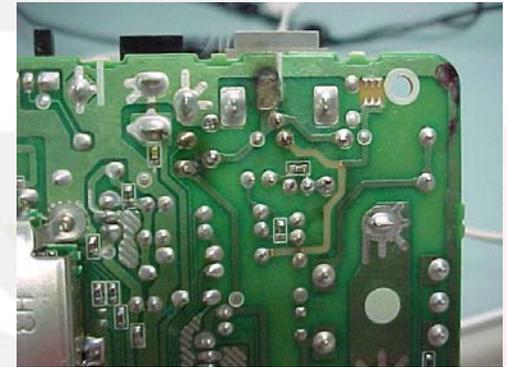
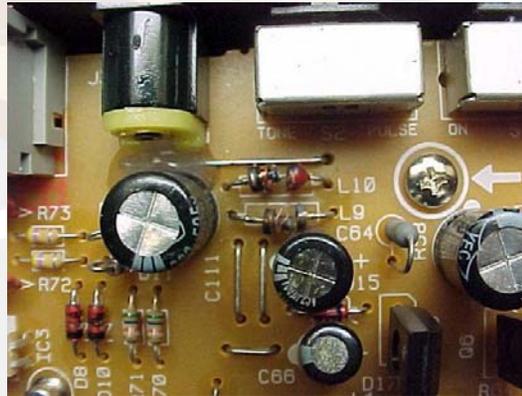
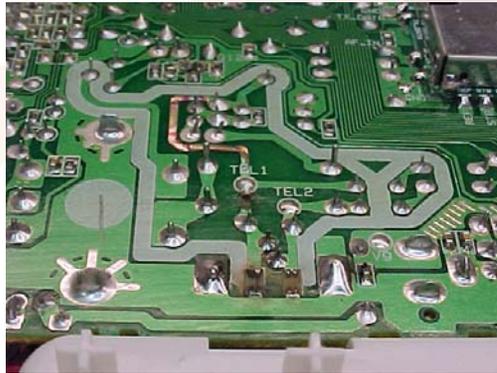
- In the late 1980's Uniden experienced a high rate of returns for repair.
- The cause of the problem was analyzed to be excessive voltage damaging the telephone network circuitry.
- Returns were more prevalent from areas that had experienced thunderstorms.



# Photos of Typical Excessive Surge Voltage Problem



# More Photos of Typical Excessive Surge Voltage Problem



# Engineering Analysis

- The service return problem was diagnosed as being caused by the differential voltage between the commercial electrical service and the public telephone network.
- The External Power Supply was allowing too much excessive surge voltage to reach the telephone interface circuits

# DEFECTIVE CORDLESS TELEPHONES APPEARED FULLY FUNCTIONAL TO THE USER

- There was no appearance of a malfunction, typically the user remained unaware that the cordless telephone was inoperable.
- However, it would not receive calls and would not provide a dial tone for outgoing calls.

# Steps to eliminate the returns caused by excessive surge voltage damage

- Uniden found that the external power supply blocking voltage criteria must be increased.
- External power supply manufacturers improved the surge voltage blocking to about 10,000 volts.

# Results of Improved External Power Supplies

- All Uniden cordless telephones were marketed with the newly improved external power supplies.
- Returns that could be identified as damage caused by excessive surge voltages dropped by **90 percent** !



# ENERGYSTAR®

- Uniden became one of the original ENERGYSTAR® Partners for Telephony.
- Uniden currently has a large share of telephones that are permitted to display the ENERGYSTAR®
- Uniden supports the goals of energy conservation



[www.CE.org](http://www.CE.org)



# Problem with ENERGYSTAR® Version 2.0 Telephone Specification

- Uniden opposed the new specification that reduced power consumption to a level that was not readily achievable when maintaining the protection from excessive surge voltages
- Uniden is “on record” that it could not participate in the voluntary program if it meant sacrificing product durability and dependability.



[www.CE.org](http://www.CE.org)



# California Energy Requirement Comparison with ENERGYSTAR®

- The external power supply specifications are virtually the same with regards to maximum energy consumption and minimum efficiency.
- The ENERGYSTAR® program is voluntary, while the California Energy requirement is mandatory.



# Current activities to obtain suitable External Power Supplies

- Uniden obtained a list of all ENERGYSTAR<sup>®</sup> EPS Partners in June 2005
- Letters went to all EPS Partners, requesting samples and pricing information
- Only 2 samples were received as of October 2005; however, both failed Uniden's surge voltage blocking specification.



# Current Status

- Only 1 satisfactory sample has been received to date by Uniden (Received in December 2005).
- 20 additional test samples were requested from the above submitter along with pricing information.
- As of the end of January 2006, there has been no response to the above request.

# What has to be done ?

- Samples need to be received for evaluation by Uniden Engineering.
- Telephones may need to be redesigned in order to incorporate new EPS technology.
- New cordless telephones that use an approved EPS must be investigated and submitted for regulatory approvals to FCC and IC. The same situation for safety compliance (UL Listing).



# Where are we Today ?

- It is apparent that a suitable EPS that meets the required CEC specification and Uniden's surge voltage specification is not readily available.
- No pricing information has been received to date.
- No reasonable assurance or expectation of meeting shipping requirements has been received by Uniden.



# Conclusion

- It is not foreseeable that cordless telephone and other similar telephone manufacturers will have a product to sell in California by the July 1, 2006 effective date.
- Because a suitable device is not available and possibly does not exist, there needs to be an exemption until July 1, 2008 for telephones to meet the CEC requirements.

