FCC Certification Application
for
FCC ID: O8FNYNY2

Summary Report
for
Handspring, Inc. Models:
Treo 180
Treo 180g
Treo 270

Prepared by:
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Units tested Feb/Mar 2002

Schematics and block diagrams subject to the attached confidentiality statement

General Information

Units Under Test:

Handspring Treo 180, Treo 180G and Treo 270

Tested For:

Handspring, Inc
189 Bernardo Ave.
Mt View, CA 94043

Tested By:

Celltech Research Laboratories
1955 Moss Court
Kelowna, BC, Canada

Tested:

Feb / March 2002

Objective:

The objective of this new certification request is to incorporate recent changes into the Treo product line. The scope of the changes is outlined below.

Background:

Handspring has made minor changes to both the Treo 180 and the Treo 180G products. These two products were previously certified by the FCC under FCC ID: O8FNYNY. It was intended that these changes be filed as a permissive change, however, the based on recommendations from the FCC, a new certification application is being filed.

The Treo 180 product line has been on the market for several months under the previous FCC ID O8FNYNY. Additional changes from the original Treo 180 have resulted in the creation of a new Treo, the Treo 270.

Summary of changes:

TREO 180 and TREO 180g

In an effort to improve the performance of the product, the antenna matching circuitry and the antenna itself have been tuned. These adjustments did not significantly alter the antenna gain and the topology of the matching circuitry did not change, only the component values have changed.

There have also been other very minor changes that would not affect the RF operating characteristics of the product (i.e. moving a resistor on the PCB to allow more clearance around a screw head). Class B radiated emissions have been retested and a DOC has been prepared.

TREO 270

The Treo 270 is basically a Treo 180 that incorporates a color display. The major changes to the Treo 270 are those changes associated with incorporation of the color display. Class B emissions have been tested and found to be in compliance, thus a DOC has been prepared.

It is important to stress the fact that all three products use the same RF module from the same vendor (which has not changed at all), as well as the same antenna. Given these changes, it was prudent to verify that Part 24 emissions and SAR were still in compliance. These parameters were tested on all three products.

Additional Information

FCC Part 24 radiated and a conducted emission testing and SAR testing was performed by Celltech Labs in Kelowna BC, Canada. SAR testing was conducted on the unit in “body worn” and “handheld” configurations for the 1.9 GHz band. When the units are body worn, it is expected that the units will be used with a headset and worn on the body in a Handspring accessory made for, and tested with, this product.

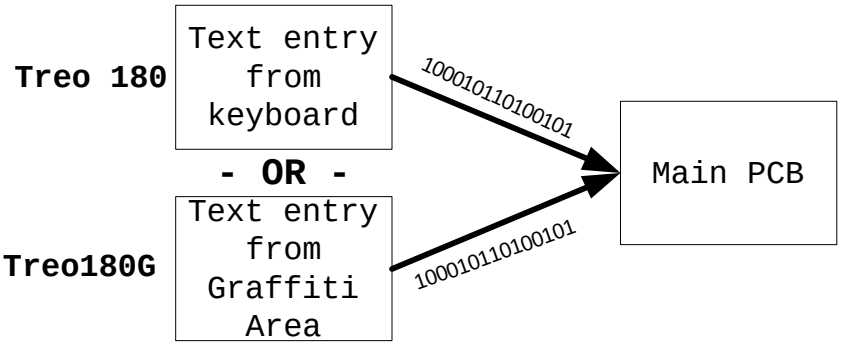
The “RF Exposure Warning” statement contained in the “Quick Reference Guide” informs the user that use of the Handspring case is required when used in a body worn configuration in order to comply with FCC and Industrie Canada requirements. This statement is unchanged from the statement that currently appears in the Treo 180 Quick Reference Guide that was previously approved by the FCC.

It is worth noting that while the schematics of the three products are essentially identical, the physical appearance of the PCS is not. The Treo 270 PCA looks significantly different form the Treo 180 and Treo 180G PCA. This is due to the fact that the additional thickness (Z-Axis) of the color display (as compared to the monochrome 180 and 180G display) intruded on certain areas of the PC board. This mechanical interference resulted in our using much smaller components on the Treo 270 to implement some of the circuitry. Hence the circuitry takes up less space on the PCB the difference in physical appearance.

An operational description of the RF module may be of interest. If so, I have uploaded the RF module technical specifications (These are to be held confidential per the confidentiality request). This module is a purchased component and therefore there is no "Tune-Up" procedure available to Handspring and Handspring cannot "Tune" or adjust any of the operating characteristics of the RF module. Parts lists for circuit boards of the three products have also been uploaded and are subject to the confidentiality as requested.

This application is for a PCE device. While the devices could be worn on the body in a belt pouch or held to the face and used like a small speakerphone. Handspring feels that most common use of the device will be held to the ear.

Note that the Block diagram and schematics are identical for both models of Treo 180s which may seem odd given that one is Graffiti and the other uses a keyboard. This is due to the fact that from the point of view of the PCB, it does not "know" or care where the text entry is coming from, either the graffiti area or the keyboard. All the PCB "sees" is an incoming bit pattern that represents characters. It does not know or care where the characters are coming from.



One final note, in several of the reports the products are referred to by their Handspring internal Product names. The table below translates internal names to actual product names:

Manhattan = Treo 180
Shea = Treo 180g
Atlanta = Treo 270

Results Summary

The following tests were performed to demonstrate compliance with FCC Part 24 and OET 65-C. Detailed results are contained in the Celltech Part 24 and SAR reports uploaded with this application. The results below are maximums, detailed results are contained in the included reports..

Test	Spec	Treo 180	Treo 180g	Treo 270
Radiated Emissions (Harmonics)	-(43+10Log(P(W))) dBc (Approx -13 dBm)	**-44.63 dBm**	**-44.65 dBm**	**-43.75 dBm**
EIRP	33 dBm	**30.19 dBm**	**30.08 dBm**	**29.67 dBm**
SAR (Head)	1.6 w/kg	**.396**	**.367**	**.323**
SAR (Body)	1.6 w/kg	**.196**	**.235**	**.155**
Freq Stability	+/- .1 ppm	**.012**	**.012**	**.012**
Bandedge	-13 dBm	**-13.95**	**-13.95**	**-13.95**