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-----Original Message-----
From: oetech@fccsun07w.fcc.gov
[mailto: oetech@fccsun07w.fcc.gov]
Sent: Monday, October 30, 2000 7:30 AM
To: llang@handspring.com
Subject:
To: David Waitt, HANDSPRING, INC.
From: Frank Coperich
fcoperic@fcc.gov
FCC Application Processing Branch
Re: FCC ID O8FHVP-1H
Applicant: Handspring, Inc.
Correspondence Reference Number: 16830
731 Confirmation Number: EA98852

Frank,
Below are Handspring's answers to your questions regarding our Part 24 VisorPhone Certification application. I have included the original email text as well.

Please let me know if you have additional questions or concerns.
Thanks,

David Waitt
Handspring, Inc.

FCC

1. Filing has requested for 2.0 W EIRP. The output test data on page 4 and 5 of the Elliott Labs report indicated 29.98 dBm EIRP, which is incorrect. The indicated field strength should compute to 0.5 W EIRP. It is unclear why a gain of 0.5 has been included in the calculation for EIRP. The SAR report indicated the device has been tested at 30 dBm. Please clarify these discrepancies and also provided the output measurements (typically conducted) done before and after the SAR tests to support the SAR data.

Handspring

The calculation in the Elliott test data is correct. Elliott was told that the VisorPhone had a typical antenna gain of –3 dBi. Therefore using a numeric antenna gain of .5 (This was used as a typical gain) in the calculations on page 5 is correct. The information that was provided on the 731 form is in error. The maximum RF power output for the VisorPhone that will be sold in the United States is 1 Watt.

The test house that conducted the SAR testing did not measure the RF transmit power at the beginning and end of the test. An email from them stating what they did do is attached.

FCC

2. Please provide new external and internal photos of the device. The jpg - paint files sent are not viewable or printable on a normal screen size.

Handspring

New photos that fit within 1024 x 768 pixels when viewed at 100% are provided.

FCC

3. Please identify the operating configurations of for this device. The info submitted indicates it has a built-in speaker, headset accessories, a leather carry-case and a plastic belt-clip. The SAR test results indicated this device has been tested for body-worn SAR compliance, and also on the left and right side of a head phantom. Other info in the filing describes this device is intended for use with a specific Sparky handheld computer only. The head test position described in the SAR report that references the ear-piece of a typical wireless handset does not appear to be applicable for this device. Please clarify all of the above and provide applicable test setup photos.

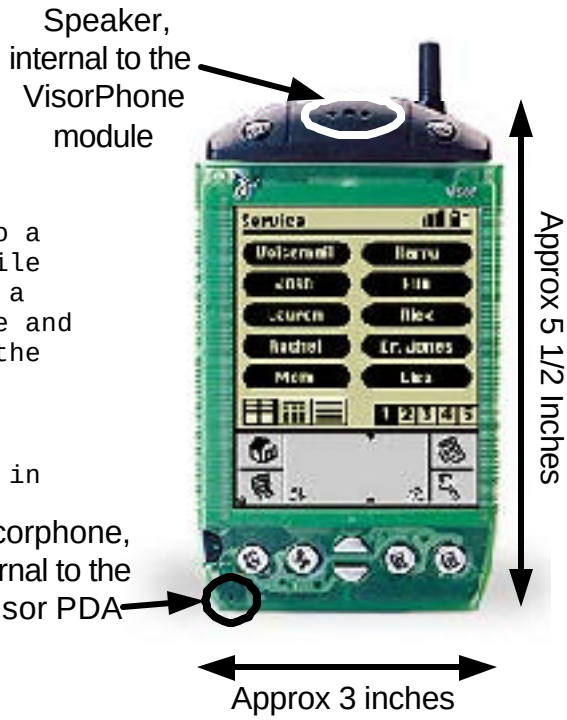
Handspring

In this description, "phone" refers to the VisorPhone module plugged into the Visor handheld PDA. A picture of the VisorPhone plugged in the Visor PDA is shown at the right.

There are basically 2 usage configurations:
Handheld: Holding the phone up to your ear. (Left or right)
Body Worn: Clipping the phone to a belt and using a headset

In these respects the phone is similar to a typical cell phone in that if it used while clipped to a belt, it would be used with a "headset" that would include a microphone and an earphone. If the phone is held up to the ear, then the internal speaker and the internal microphone are used.

Therefore, the usage positions described in the SAR report are accurate in that when the phone is held to the ear or clipped to a belt, it is very similar to a typical cell phone



Typical Handheld Use

FCC

4. Device manual describes this transmitter may operate in both GSM 900 and PCS 1900 bands. Please confirm all production units will have identical hardware included for both bands; even though, only the PCS band is applicable for this filing for use in U.S. territories. As differences in hardware may result in different SAR, this will be clarified on the grant of equipment authorization.

Handspring

In the United States the phone will operate as a typical 1.9 GHz PCS phone. Overseas, the phone will operate as a dual band GSM phone in the “900 MHz” and the “1800 MHz” bands.

The version of the phone is determined by “stuffing options” on the PC card. Other than this, the hardware of the two types of phones is the same. Since the only difference between the two types of phones is component placement and component values, it is unlikely that the SAR results would vary from one type to another.

All of the phones sold in the U.S. will use the same hardware.

FCC:

5. Please identify the peak SAR locations, with respect to the device, on the SAR contour plot; for the configurations tested - head (if applicable) and the two body-worn conditions.

Handspring

A New SAR report that overlays the outline of the phone on the SAR contour plot is included.

FCC:

6. The RF exposure language proposed n the manual is for a typical wireless handset, which may not be applicable for this device. It suggests 1-inch separation for body-worn use, which may not be supported by the existing test data if third party belt-clips with metallic components in the assembly are used. It also recommends 1-inch separation between the antenna and persons, which would only apply if the peak SAR location is related to the antenna and can be supported by the test data. The manual information should indicate to users the specific operating requirements for all operating configurations that are applicable for this device, and also alert users that these are required for FCC RF exposure compliance. Please clarify and revise manual accordingly. The relevant pages of the revised manual should be uploaded.

Handspring:

Indeed, the revised SAR report showing correlation between the contour plots in the report and the VisorPhone indicate that the “Hot-Spot” of the phone is not the antenna. Therefore the statement in the back of the manual has been modified to warn the user to keep the entire device at least 2.5cm from the body (when transmitting).

The text has been approved within Handspring and given to the technical publications department; however, it has not been incorporated into the final version of the manual at this time. Please accept the attached PDF file.

FCC:

7. The frequency range indicated in the theory of operations uploaded for this filing does not agree with what has been requested for this filing; please clarify.

Handspring:

The exact frequency ranges of both versions of the phone are below. Obviously, only the US version will be marketed in the US. We are seeking certification on the US version only.

United States Version		Max Power	MAX EIRP
1850.2 MHz to 1909.8 MHz	(Phone Xmit)	+30 dBm	+30.3 dBm
1930.2 MHz to 1989.8 MHz	(Phone Rcv)		
Foreign Version			
890.2 to 914.8 MHz	(Phone Xmit)	+33 dBm	+25.7 dBm
935.2 to 959.8 MHz	(Phone Rcv)		
1710.2 MHz to 1784.8 MHz	(Phone Xmit)	+30 dBm	+31.2 dBm
1805.2 MHz to 1879.8 MHz	(Phone Rcv)		

The EIRP is approximate due to the fact that the antenna gain varies throughout the antenna pattern. The data presented here is for the RF-PA5 antenna, vertical polarization, in the “Talk Position”.

FCC

8. FYI - please keep tissue dielectric parameters for head and body phantoms to within 5% of those currently considered by the IEEE SCC-34 and CENELEC to avoid delays for future filings. These parameters will most likely be adopted very soon for FCC testing purposes.

Handspring

Thanks!