



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

To: Mr. Tim Johnson  
American Telecommunications Certification Body Inc.  
6731 Whittier Ave, McLean, VA 22101

From: David Waitt  
Sr. Regulatory Engineer, Handspring, Inc

RE: FCC ID: O8FDK

July 17, 2003

Mr. Johnson,

The additional information you requested regarding our recent FCC certification application (FCC ID: O8FBW) is below. I hope this addresses your concerns. If you would like any further information, please do not hesitate to contact me at [dwaitt@handspring.com](mailto:dwaitt@handspring.com).

Your questions are included for your reference below, along with the reply

Best Regards

A handwritten signature in black ink, appearing to read 'David Waitt'.

David Waitt

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#### General

**ATCB 1)** Please provide internal and external photograph exhibits.

**Handspring)** The photos were inadvertently omitted from the initial application. They have now been uploaded to the ATCB site.

**ATCB 2)** Please provide a users manual for this application.

**Handspring)** The users manual was inadvertently omitted from the initial application. It has now been uploaded to the ATCB site.

**ATCB 3)** Please provide a test configuration photograph exhibit.

**Handspring)** The EMC test setup photos were inadvertently omitted from the initial application. They have now been uploaded to the ATCB site.

**ATCB 4)** Please provide a parts list for this device. If necessary, please update the confidentiality letter.

**Handspring)** A parts list has been uploaded for both the main PC board as well as the GSM RF module. The Confidentiality letter has been revised and uploaded

**ATCB 5)** FYI. Normally the FCC label includes a colon after the term "FCC ID". For future applications it would be best to apply the preferred formatting of "FCC ID:".

**Handspring)** Agreed. The silk screen will be modified. The colon will appear on the device the next time we order plastics for production.

**ATCB 6)** Information in the artwork for the label appears to show the FCC logo. Please explain if this is being utilized on the device and for what approval it pertains.

**Handspring)** This lower left corner of the drawing is simply being used as a "Logo Storage Bin" for various foreign regulatory marks in case future foreign certifications require a regulatory mark. The marks do not appear on the device being certified. The only marks appearing on the device currently being certified are those shown on the back of the unit in the drawing.

**ATCB 7)** Please provide:

a) DC voltages/currents applied into the several elements of the final radio frequency amplifying device for normal operation over the power range

**Handspring)** The DC voltage is from the battery and range from 3.6 to 4.2 (depending on the charge of the battery). Current depend on many things like PCL, Display brightness etc. In Peak burst Current drain is ~2A, though over average is more in the 200 - 300 mA range

b) Tune up procedure over power range

**Handspring)** A tune up procedure has been uploaded and this document included on the revised confidentiality request letter

c) Description of all circuitry and devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation, and for limiting power.

**Handspring)** Frequency is synthesized from a temperature compensated reference oscillator at 13 MHz. Spurious is limited by the use of NZIF (which decrease the amount of spurious). In addition radio is shielded completely. Modulation is generated with I/Q signal's based on lookup table. In addition modulation is checked in manufacturing. Power amplifier have built in power detector and control loop, which keeps power constant over time, temperature and voltage. In addition all radios are individually calibrated

#### **EMC Report - 800 MHz GSM**

**ATCB 8)** Please correct or add the ERP value for power output to the results in page 7 of 17. Note that the FCC uses ERP for Part 22.

**Handspring)** Power has been included as ERP in the report page 7 of 17.

**ATCB 9)** The low channel block B on page 12 of 31 appears over 700 kHz above the band edge (note the center of the screen is 835.65 MHz and should be 835 MHz). Please confirm if this is the actual lowest channel used in this block. Otherwise please provide a new plot for this bandedge.

**Handspring)** New plot for this request has been re-done. New revised report with data has been uploaded

**ATCB 10)** The 99% occupied bandwidth shows a measurement of 235-237 kHz, yet the 731 form shows 1.3 MHz. Please explain. Note that the FCC typically accepts an emissions designator of 300KGXW for GSM device to Part 24E and 22H.

**Handspring)** The emissions designation entered on the 731 for was an error. The correct emissions designation for this device is 300KGXW

**ATCB 11)** Please explain the rational for selection of measurements during the radiated spurious emissions via the substitution method for channel 191. It does not appear that the highest measurements were selected for test. For instance, it appears that out of the 4 measurements provided for channel 191 that only 1 of these measurements was in the highest 4 emission measured on page 18 of 31. The higher emissions at 2.5, 5.8, 7.5 GHz do not appear to be measured.

**Handspring)** Measurements for 2.5, 5.8, and 7.5 GHz have been included into the substitution table. Report with new data has been uploaded..

**ATCB 12)** The frequency stability results for temperature look unusually small (page 29 of 31). Please check results to see if they are actually listed properly and the correct units is given in the table (Hz).

**Handspring)** The units of the result should have been MHz. Therefore the drift was actually measured at 887Hz. The EMC report has been corrected

**ATCB 13)** Please explain the derivation of 0.064 ppm on the 731 form as this does not appear to match the test report (0.064 ppm at 836.867 MHz = 54 Hz drift).

**Handspring)** There was an error in the calculation for the 731 form.

The correct drift is: 836.867MHz/890Hz = .9403ppm

**ATCB 14)** FYI. As of February 2003, the FCC implemented revisions to Part 22. For future reports, please follow the requirements of these revisions, as it will make reviewing the reports much easier since many section references are different than previously. Attached is a copy of the changes to Part 22.

**Handspring)** Noted, Thank you

#### **EMC Report - 1900 MHz GSM**

**ATCB 15)** Please explain the 0.011 ppm listed for 1900 MHz CDMA. It appears from the report this should be 0.669 ppm based on 1240 Hz at 1854 MHz.

**Handspring)** The correct drift should be, .669 ppm ( 1240Hz / 1854MHz)

#### **SAR Report**

**ATCB 16)** The FCC asks that we compare the EMC and SAR power measurements for purposes of ensuring the power during SAR was set to maximum. However the EMC reports only listed ERP and EIRP power measurements while the SAR report included conducted measurements. Please explain how a comparison between the 2 can be shown.

**Handspring)** To facilitate comparison of the RF power between the two labs, the EMC report includes the conducted RF maximum power that was measured before each test. This can be compared to the conducted power measured at the SAR lab prior to and after each SAR test.