

From: oetech@fccsun34w.fcc.gov
Sent: Monday, September 23, 2002 11:13 AM
To: SCHENG@CCSEMC.COM
Subject: SAR Issues

To: STEVE CHENG, COMPLIANCE CERTIFICATION SERVICES
From: Steve Dayhoff
sdayhoff@fcc.gov
FCC Application Processing Branch

Re: FCC ID HZB-8460
Applicant: Proxim Corporation
Correspondence Reference Number: 23990
731 Confirmation Number: EA241977

0) Please explain reasons and differences for "primary" and "supplemental" SAR reports

(CCS response: Primary report refer to the report tested to the original version of the Atheros FCC ID: PPD-AR5BCB-00022 (Grant date :09/11/2002) which has exact same hardware and firmware except that Proxim used a different antenna, and the Supplemental report represent the report that tested to the new added antenna by Proxim.)

For example, at 5.8 GHz primary states 21.3 dBm with SAR=.08, secondary gives higher SAR=.65 with lower power 20 dBm.

(P. Gandhi to answer)

Likewise 2.4 GHz primary shows tests in 802.11b and g modes, but mode not shown in 2.4 GHz supplemental report. 2.4 GHz reports appear to use different notebook computers, but even with apparent increased spacing to phantom SARs are similar.

(CCS response: For shorting the test time, 2.4G and 5 G has been scheduled to be tested by different SAR lab at same period and same Laptop is not available to the 2.4 G test. The similar reading with different spacing may due to the use of different antenna) (Atheros used .11b / .11g testing. Comparing this testing to Atheros on primary report it was determined that only .11b mode is the worst case mode)

Indicate which if any of these reports are not applicable to this filing.

(CCS response: Primary (Same as Atheros FCC ID:PPD-AR5BCB-00022) and Supplemental SAR report (tested with alternate Proxim antenna) both are applicable to this filing.

1) Please submit absolute power measurements for the device before/during/after the SAR test to demonstrate that the device was operating at maximum power as stated on page 4. Please include measurement procedures. Also additional clarification of maximum power. SAR report mentions 126mW, Form 731 has 90 mW. Please clarify, and revise, harmonize, re-submit all relevant exhibits accordingly.

(CCS response : pleaser refer to P. Gandhi summary which associated with Amended SAR test report dated 10/10/02)

2) Please submit details of the SAR test host device - dimensions, model number, distance from bottom of notebook to bottom of card, etc. Also, please provide additional photographs of the device setup underneath the phantom for reference purposes.

(CCS response : pleaser refer to P. Gandhi summary which associated with Amended SAR test report dated 10/10/02)

3) Please submit revised users manual with additional user operational information. The user should be made aware of the host(s) this device was evaluated as. Users should be informed how to use the device to assure they are not exposed to excessive levels consistent with the compliance testing results. How will 2.5 cm gap be maintained in the lapheld position? SAR test data does not support compliance at an arbitrarily close gap. Additionally, please add information instructing the user not to collocate/operate this transmitter with other transmitters for RF exposure compliance purposes.

(CCS response: Revised user manual has been uploaded to FCC.)

4) EMC report mentions a pulse duration of 2.1 msec on page 22. If not a constant power envelope signal, please give full timing information for the signals tested.

(CCS response: the Proxim radio card cannot operate at 100% duty cycle. The active power control circuitry needs to reset periodically and this requires the transmitter to turn off. The test program is designed to produce the shortest off time (to keep the duty cycle as close as possible to 100%) and keep the power control circuitry operational.)

The full measured timing information is as follows:

Pulse ON time = 2.1 msec

Pulse OFF time = 44 usec

Duty Cycle = 99.79 %

)

5) Please submit printout/raw data from dielectric parameter measurement system covering the entire operating frequency range of the device. The device appears to have two separate operating frequency bands. If parameters vary significantly please provide SAR results using separate liquid parameters for each band.

(CCS response : pleaser refer to P. Gandhi summary which associated with Amended SAR test report dated 10/10/02)

6) System validation information for each day of testing according to Supplement C.

(CCS response : pleaser refer to P. Gandhi summary which associated with Amended SAR test report dated 10/10/02)

7) Please submit coarse scan data used to locate peak SAR region for subsequent zoom scan.

(CCS response : pleaser refer to P. Gandhi summary which associated with Amended SAR test report dated 10/10/02)

8) Justification that hot spot was fully scanned during zoom scan. Data suggest peaks were not fully scanned.

(CCS response : pleaser refer to P. Gandhi summary which associated with Amended SAR test report dated 10/10/02)

9) New data contour plots including data, liquid parameters, temperatures, and probe conversion factors. Suppl C App. B II 7 c) states "description, illustration and SAR distribution plots showing the peak SAR locations with respect to the phantom and the test device." Please submit.

(CCS response : pleaser refer to P. Gandhi summary which associated with Amended SAR test report dated 10/10/02)

10) Probe was calibrated at 5.3 GHZ. What is expected change in probe cal factor and expected resulting change in SAR at 5.8 GHZ?

(CCS response : pleaser refer to P. Gandhi summary which associated with Amended SAR test report dated 10/10/02)

11) Discussion of how the EUT was operated/controlled during the test to assure the testing of all appropriate modes, maximum power, and any duty factor driven parameters, per Supplement C Appendix B part I 2. If possible provide post-test power data to confirm that the EUT was operating at full power throughout the test.

(CCS response : pleaser refer to P. Gandhi summary which associated with Amended SAR test report dated 10/10/02)

12) Additional legible overview photos of the phantom, phantom stand, and SAR measurement system.

(CCS response : pleaser refer to P. Gandhi summary which associated with Amended SAR test report dated 10/10/02)

13) Please confirm/demonstrate that notebook computers were in contact with phantom for underside position, with card in whichever slot gives highest SAR.

(CCS response : pleaser refer to P. Gandhi summary which associated with Amended SAR test report dated 10/10/02)