



Mr. Tim Johnson,  
ATCB

Below is a response to your comments.

After a review of the submitted information, I have a few comments on the above referenced Application.

**Administrative Issues:**

1) It does not appear that any applications under FCC ID HSW2410M exist. It appears that this may be for FCC ID HSW-2410M. Please confirm and if correct adjust the 731 form provided.

This is confirmed. The form 731 has been corrected.

2) This device has a large number of past Permissive changes and antennas. Normally we would expect that the highest gain of each type of antenna approved should be checked. This agrees with Joe Dichoso's email on June 14, 2004 as well.

Following is a brief history of the approvals:

Original Application – 10/10/99 - Approve 7 antennas:

- 1) Dipole 2 dBi - tested
- 2) Yagi 15 dBi - tested
- 3) Omni 6 dBi – represented by 9 dBi antenna
- 4) Omni 12 dBi “This antenna never really worked very well, and we don't recommend it any more. Please delete from PC2”
- 5) Corner Reflector 14 dBi - tested
- 6) Patch 7 dBi “This antenna was never sold, Please delete from PC2”
- 7) Patch 3 dBi – represented by 12dBi patch

1st PC application – 3/29/01 – Add 5 Antennas

- 1) Vehicle Mount Stub 2.5 dBi “This is the same type as a monopole only with a magnetic mount, true gain is about 2.2 dBi” - tested
- 2) Corner Reflector 9 dBi – represented by 14 dBi antenna
- 3) Whip 5 dBi - tested
- 4) Dish 24 dBi - tested
- 5) Dish 18 dBi – represented by 24 dBi

2nd PC application - 1/28/02 - Add 2 antennas from different manufacture

- 1) Mobile Vehicle Whip 5 dBi “magnetic mount, same as the Whip 5 dBi above”
- 2) Omni 9 dBi – tested

3rd PC application -10/7/02 - Add 1 antenna

- 1) Panel Antenna 11.1 dBi “This was for just one customer, Please delete from PC2”

4th PC application – 11/1/02 – Add 1 antenna

- 1) Patch 12 dBi “Designed by GA Tech for Cirronet Gain = 12 dBi” – tested and added to report

5th PC application - 11/14/02 – Add 1 antenna

- 1) Patch 6 dBi – tested before receipt of 12 dBi antenna

6th PC application – 10/30/03 - change of antenna connector

Antennas tested or of lesser gain/same type and covered by this application are give in blue. However there are a few antenna which do not appear to be covered by this application which are highlighted in red. If all antenna are not covered, please provide an explanation. Note that if all

antennas are not being covered, a clarification from Joe Dichoso may be necessary on how to handle this application. Are these other antennas highlighted in Red to be offered any more?

See above. Client's comments are in quotations. 9 antennas tested representing 5 of equal or lower gain.

3) The test report should be signed by the appropriate responsible party overseeing or responsible for all tests per NVLAP requirements (separate from test technician). Please correct.

Signature page added

4) Was the dipole tested with 2 different cable lengths per the test diagram? Please confirm.

No. The diagram has been corrected.

5) The test equipment list appears to incorrectly report the horn antenna.

Corected

Additionally, what was used for measurements from 200 MHz to 1 GHz.

Log Periodic antenna, added to test equipment list.

Additionally was a preamp used > 1 GHz?

Yes, added to equipment list.

6) Page 23 mentions previously approved antennas. Which antennas are being approved now.

See item 2 above and list in revised report.

7) Page 28 appears to mention a 12 dBi Omni which is not covered by this application. Please explain.

As listed above, this antenna is removed from the request.

8) It appears from the test data that only the 2<sup>nd</sup> harmonic was checked for radiated. It is expected that a sweep be performed to check further up the spectrum up to 10 times the fundamental. Was this done?

Yes, no further harmonics were measured within 20 dB of FCC limits.

9) For radiated bandedge, what are the final radiated results (peak & average) for these measurements. Note you need only present worse case from the data provided.

Please clarify your question. Do you wish us to provide only the worst case antenna plot of all antennas tested?

10) Please provide power measurements that show the maximum power of this device is within +/- 0.5 dB of the previously reported 50 mW. This can not simply be assumed from the original application. Note that also the RF exposure exhibit should be adjusted for this fact.

Power plots, along with the original maximum value plot have been provided showing .01 dB variance from the highest original data.

11) Please note that the FCC no longer desires that the safe distance for mobile devices be calculated in the RF exposure exhibit for mobile applications (< 20 cm to user distances), but instead prefers the power density results to be calculated at 20 cm and compared to the power density limit. Please correct.

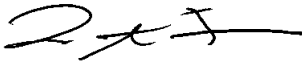
Both calculations were provided. The results were 1.6 mW/cm<sup>2</sup> for fixed installations and 0.1 mW/cm<sup>2</sup> for mobile installations. Since the results of the fixed installation exceeded the limit, the calculated distance was added to show that for the fixed installation, a 26cm distance should be applied. Is this correct?

12) The last paragraph of the RF exposure appears to mention a 26 cm distance. It appears this should be 20 cm. Please review.

See item 11.

Please contact me with any further questions regarding this submittal.

Sincerely,

A handwritten signature in black ink, appearing to read 'L. Feudi', with a stylized flourish at the end.

Louis A. Feudi