American Telecommunications Certification Body Inc.
6731 Whittier Ave, McLean, VA 22101

February 4, 2003

RE: WaveIP Ltd.

FCC ID: QQ2-GA24

I have a few comments on the above referenced Application.

1) Page 2 of the operational description and page 8 of the users manual mention that this system is self installed, while section 2.4.3.2 mentions it must be installed by qualified personnel. Given the nature of this system and other information provided, this system should only be installed by qualified personell, please remove reference to "self installed" given in the operational description and users manual.
2) When compliance with the EIRP limit is achieved for various antennas by adjusting the transmit power at the time of installation, then professional installation of this transmitter is required. Please provide an attestation (including justification) that this system will only be professionally installed.
3) The installation manual must contain adequate instructions such that the correct transmit power can be chosen by the installers for any antenna being used. Please comment.
4) The schematics and internal photographs appear to show that two antennas may be connected simultaneously. Information within the application does not address multiple antennas. Please explain.
5) The operational description mentions that the output power gets adjusted so that the maximum EIRP will not exceed the regulation limit. Please confirm that the EIRP will not exceed +36 dBi with this system for any antenna used.
6) Since power output levels will affect compliance of the unit with the FCC's rules, explain what precautions are built into the system to keep the end user from adjusting the power output levels above +36 dBi. For example adjustment of this feature is only allowed by passwords used by the installers, maintenance personnel, etc. (reference 15.15(b)).
7) The operational description mentions integrated and detached antennas (section 2.4.3) However, only one set of results were included in the test report. Please provide specific information regarding the specific antenna configuration that was present in the sample tested. What was the output power of the system during this test?
8) Please note that both the highest gain and lowest gain antenna of each type (monopole, ¼ wave dipole, dish, patch, yagi, etc) must be tested for spurious emissions. Please note that simply a type directional or omnidirectional is not sufficient. More detail such as Monopole, ¼ wave dipole, dish, patch, yagi, etc. should be provided. The purpose of the lowest gain antenna is so that the EUT is operating at its highest available output power before power is reduced in order to test for case radiation.
9) Please provide a detailed list of all antennas (type, gain, manufacture, etc. to be approved with this device). Additionally, please provide photographs of all antennas to requested to be approved.
10) The operational description mentions reduction of the EIRP so that the device stays under +36 dBi. However, the RF exposure calculation shows no reduction of the output power. Please note that RF exposure exhibit should be consistent with the information presented in the report. Also, it appears that for purposes of RF exposure, that this device should be classified as a fixed device (distance between user and antenna is > 2 meters) or mobile device (distance between user and antenna is > 20 cm). Please updated the RF exposure exhibit and test report section 4.3 to include how the device is categorized and also to be consistent with the application. Note that if +36 dBi is the maximum EIRP, then the device should meet the 20 cm requirement. Additionally, it is not certain why 2 different RF exposure distances (20 cm and 50 cm) are given in the manual.
11) Please note that RF exposure conditions have not been addressed for co-located antennas.
12) The test setup photographs only show 1 configuration tested. Additionally, are photographs available for > 1 GHz?
13) Please explain the difference between p2p and p2mp sectors.
14) Section 2 of the test report states conducted emissions are N/A. Please note that this device must show compliance with 15.107 and 15.207 since it obtains its power from a host device. Please provide data to show compliance with this.

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15) Please confirm that a change in the data rate does not affect the bandwidth of the TX envelope. If the envelope changes, then please provide more data at different data rates to show compliance with the minimum 6 dB bandwidth.
16) FYI. Proposed Grant Comments:

    Grant Conditions – This device must be professionally installed. Marketing to the general public is prohibited. The antenna(s) used for this transmitter must be fixed-mounted on outdoor permanent structures with a separation distance of at least 2 meters from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. Users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

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The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information may result in application termination. Correspondence should be considered part of the permanent submission and may be viewed from the Internet after a Grant of Equipment Authorization is issued.

Please do not respond to this correspondence using the email reply button. In order for your response to be processed expeditiously, you must submit your documents through the AmericanTCB.com website. Also, please note that partial responses increase processing time and should not be submitted.

Any questions about the content of this correspondence should be directed to the sender.