



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

February 22, 2005

RE: Leica Geosystems, Inc.

FCC ID: QOHSR20

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

- 1) Please update the confidentiality letter to include reference to 47 CFR 0.459. See attached information as well.
- 2) Information provided in response to question 3 is confusing. Your response states that the only change from the previous device is the Bluetooth Module. You additionally state that the Bluetooth module is NOT the transmitter. If the Bluetooth is not the TX, than what are we Certifying as a TX? It appears from the internal photographs that a different portion of the device may have been labeled as a TX as well – but it appears that this part of the device may actually be the GPS engine portion of the device (note internal photographs of this portion of the product with shields removed were not provided). Additionally, please note that the original application was Certified from 2402 – 2480 MHz (Bluetooth Frequencies), at power levels that are typical for Bluetooth, for a FHSS device (which is exactly what Bluetooth is), and internal photographs support that the device was Certified for the Bluetooth TX. All documentation suggests the Bluetooth portion was the TX in the original. Because these inconsistencies are confusing, I am confused as to what you are stating is the TX. You response also states that the Bluetooth board is only used as a hardwire interface. If so, it is not understood why a Bluetooth TX board, complete with antenna would be used only as a hardwire interface when this is typically used in most devices for short range transmissions. Additionally, please note that the users manual clearly denotes the TX device uses Bluetooth Transmission technology.

After careful consideration to all documents, it appears that maybe you are trying to state that the Bluetooth board (as a whole) has changed in the digital device portion of its circuitry only, but that the small Bluetooth component on this board is the same. If this is the case, please note that sufficient photographs of this part of the device in the original application where not provided with the sub-shield removed from the Bluetooth Module and therefore it can not be adequately determined that this component is actually still the same. Second, careful review of the Bluetooth Component show different subshields and suggests the component itself is different. Third, and more importantly in this case is the fact that there is a 5 dB degradation of performance as shown between the original and this application. Even if these 2 components were the same and the fact that this is considered a degradation, the FCC has defined to us through TCB training that conducted measurements must be +/- 0.5 dB or Radiated EIRP measurements +/- 3 dB of the original to be considered under a Permissive Change application – otherwise the FCC considers this an intentional change of power and does not allow this to be done under a Permissive Change.

To clarify these issues and concerns, please provide a precise and clear description of the TX being Certified in this case.

- 3) If another portion of the device is actually the TX, then complete schematics, block diagrams, theory of operation/operational description, and photographs of this portion of the device have not yet been provided. However if the TX is the Bluetooth Component, photographs of the Bluetooth module (component) should also be provided with its subshield removed. If the Bluetooth component is actually on its own board, photographs of the bottom of this board should be provided as well.

- 4) To the previous question:

The device appears to be capable of connecting to a PC via a data cable is also categorized as a PC peripheral device. Please clarify if you are asking for:

- a) Certification of the device as a TX, and a DoC has been performed by an appropriately accredited test lab for a PC peripheral
- b) Certification as a TX + PC peripheral.

Note 1: The option b) would be considered as a composite application and 2 certificates (one for the TX, one for the PC peripheral portion) would be issued. There are additional review costs associated with this additional certification.

Note 2: To qualify to perform DoC applications, the test lab must be accredited (i.e. NVLAP or A2LA) to perform testing under the DoC procedure and the device has additional labeling and manual requirements for the DoC. Currently the device does not appear to be appropriately labeled for a DoC..

Note 3: Note that for DoC tests, the device is configured with a minimum test configuration as specified by ANSI C63.4 which includes complete computer + 2 I/O devices attached (one may be the EUT).

your response provided was:

Incorrect assumption, the port located on the device is for an external battery pack only. There is no connection to an external device. There is no capability to download information other than through the tx portion of the device.

DNB Engineering NVLAP Code: 200587-0

However the users manual clearly denotes there is a port that can be used for transfer of data to PC. See page 7 and 28. Please explain. It appears that approval of the device as a PC peripheral (due to the capability of connecting to a PC) has not been adequately addressed.

- 5) It does not appear that you have confirmed that radiated emissions were performed for a typical low, middle, and high channel. If not included in the original data, this data must be provided. Additionally, please note that for Radiated testing, the FCC asks the device to be hop-stopped and not actually hopping during testing. See attached document.
- 6) FYI only.....It is very unusual to not report any spurious or harmonic emissions. Some reviewers may insist that according to ANSI C63.4, you should report a minimum of 6 emissions. Additionally some reviewers may question the conditions of test or if you had sufficient dynamic range to make the measurement. It would be recommended when results are so low as you suggest, that you at least report some results of the noise floor to adequately show there were not any concerns with dynamic range of the measurement system.
- 7) FYI onlyPlease note that your response to item 13 is correct, however in the future care should be taken to ensure this methodology is applied only for Digital Device emissions. Note that the section of the rules referenced specifically states Digital Devices. Note that this effectively covers 15 Subpart B only and not TX's under Subpart C. Therefore this methodology is not usually considered acceptable for TX emissions. However it does appear that all emissions > 1 GHz were

measured at 3 meters and therefore all spurious and harmonics of interest would generally be > 1 GHz in this case and any results obtained over 1 GHz would be acceptable..

- 8) FYI only.....In the future, please upload all documents through the ATCB website. This ensure secure transmission, accurate documentation of status of uploads, and avoids some cases where emails may be rejected for various limitations



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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.