



# Washington Laboratories, Ltd.

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February 22, 2008

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

RE: Comments of February 21, 2008  
APPLICATION: CBF-ADVLF45-450 Control Chief

Dear Mr. Johnson:

Below are the comments that you have provided regarding the application for certification referenced above. Our responses to those comments are in ***bold italic***. Many responses refer you to additional exhibit(s) which has been uploaded to the application folder at the ATCB website.

Thank you for your attention. Please feel free to contact us for any additional information that you may require.

Regards,

*Steven D. Koster*  
EMC Operations Manager

*Brian J. Dettling*  
Documentation Specialist

WLL Project: 9805-9806

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1) Due to various concerns recently seen about proper authority being given to others for FCC and/or IC matters, the agency letter (and confidentiality letters as well) should be signed by someone traceable to have the proper authority. For instance, the FCC site shows Rob Reese as the correct contact of authority for FCC matters. Therefore the agency letters should be signed by this contact or alternatively a letter showing who he has “deputized” (i.e. John Bryner) to sign on his behalf may be provided as well.

***R. Please see “Revised Letter of Agency” and “Revised Request for Confidentiality”.***

2) Representative Internal View (photograph 1 in internal photos) appears to show a different RF module installed. Please review.

***R. An outdated photo was inadvertently used. Please see “LJ45-450 Internal Photos revised”.***

3) The label appears to be in the battery compartment. Therefore kindly explain compliance with the following:

FCC labels in user accessible areas

As an option to placing the FCC label on the exterior of the device, the FCC label can be placed in a user accessible area if the following conditions are met.

- 1) The device is handheld.
- 2) The FCC identifier is visible at the time of purchase. Marketing the device without the battery installed when the label is in the battery compartment is acceptable. The FCC identifier on the box or additional documentation directing the user as to where to find the FCC label also satisfies this requirement.
- 3) The user accessible area must not require any special tools for access and the FCC label must not be placed on a removable part.

***R. The applicant attests:***

1. ***Device is handheld.***
2. ***Battery cover is not installed during shipping. Additional notation of FCC ID is included on outer packaging.***
3. ***Battery compartment is not removable. No special tools are required to remove the compartment cover.***

4) Kindly explain tunable bands of operation and actual tunable channel frequencies (i.e. report mentions only 7 channels). Please see attached. According to Part 2, I would appear that the grant would list the following bands (although this would be adjusted by actual tunable channels as well):

450 – 454 MHz

456 – 462.5375 MHz

462.7375 – 467.5375 MHz

467.7375 – 470 MHz

Note that if exact tunable frequencies are not provided. When known, the FCC wants the above adjusted by this. Please provide actual tunable frequency list. Note that it appears that the original radio module (by doing research) may be capable of 256 channels. Please explain in detail. Also, if these differ from the tested 450, 460, and 470 MHz, kindly explain.

***R. Please see “ST500 data sheet”, “94-00-0-003\_B”, and “freq search instructions”. Exhibits “94-00-0-003\_B” and “freq search instructions” should be considered part of the Operational Description and held confidential accordingly.***

***The applicant describes the documents:***

**The ST500 data sheet should give you all the information needed on the programming the Wood and Douglas radio modules.**

**The frequency search instructions are an internal document detailing our procedure for selecting a frequency to be submitted for licensing at a given location. These instructions reference a frequency search utility from PerCon Corporation which has been customized for Control Chief to filter based on our band plan. The band plan is attached as 94-00-0-003\_B.xls**

**Once a frequency is selected and approved, that frequency is programmed by Control Chief into the Wood and Douglas module and cannot be readily changed by the user.**

5) Parts List provided appears to match the first internal photograph and therefore do not applied since they appear to be for a different version. Please review.

***R. An incorrect file was previously uploaded. Please see “LJ45-450 Assy Dwg 02”.***

6) Internal views provided in the Tune Up Procedure appears to match the first internal photograph and therefore appears to be for a different version (i.e. test points not accessible and may be different). Please review.

***R. An incorrect file was previously uploaded. Please see “Advantage LJ Tuning Proc 02”.***

7) Kindly provide RF Exposure information. Kindly confirm that the antenna element is > 20 cm from the user. Note the users manual mentions 20 cm from antenna to user (page 3). It is unsure if this distance applies.

***R. The antenna is closer to 8.5 cm from the person when used normally. The MPE report shows the safe distance to be 2.2cm, because the antenna is inside the unit, the user can not get that close to the antenna.***

8) Users manual mentions 25 mW output power. 731 Form cites 45.7 mW. Please explain.

***R. 45.7mW is the measured power output, the manual has been changed to reflect this value.***

9) Is NVLAP reference in test report still correct?

***R. Yes, testing was performed under that accreditation.***

10) Reference to TIA/EIA 603 appears outdated. Please review. (i.e. B vs. C)

***R. The standard used was TIA/EIA 603 B***

11) What is ANSI/TIA/EIA-603-93 (another reference to same standard?)

***R. Should be the TIA/EIA 603 B***

12) The last device that was certified by this applicant (similar design) was about 10 dB higher in output power. Is output power on this device expected to be around 16.6 dBm? From doing research on the module, it does appear the module has 500 mW capability, but appears adjustable down to 5 mW. Additionally, if this will be approved < 500 mW, what controls this power setting? What ensures it stays set only from the manufacturer?

***R. The output was measured at 16.6dBm and verified with the client. The power is set during tune-up and is not able to be changed by the end user.***

13) Given the nature of the TX likely looking at a data stream of input, is the reference to 50% on page 7 (and several other pages as well) actually correct or was the output just the actual signal typically transmitted?

***R. The output is selected from client (Control Chief) supplied software to run the unit. It was selected as 2400 bps at 50% modulation, so that is what we believe it to be.***

14) FYI....Mask plots appear to use a -13 dBm limit outside of the 12.5 kHz band of TX, but -20 dBm limit would appear to apply outside the mask. Please be careful of this in the future.

***R. noted***

15) Users manual cites a frequency tolerance of 2 ppm. Report page 25 suggests 23.43 ppm (see deviation % for voltage stability).

***R. An error in the test report has been corrected and verified. Please see “LJ45-450 Test Report rev 1”.***