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

November 8, 2006

RE: FCC ID:BCR-RPT-NCM837_ATCB004223 Attention: Tom Tidwell

I have a few comments on this Application. Please note that further comments may arise in response to answers provided to the questions below.

1. Please note that the request for confidentiality states “Datasheets” as an exhibit to which confidentiality is requested. This could potentially be taken to mean test data. Please note that test data cannot be confidential. If by “Datasheet” the applicant means the file labeled “operational datasheet”, please so clarify or simply put “Operational Description” in the request.
Response: “Datasheets” as referenced in the confidentiality request was intended to specify the file labeled “datasheet_nodeC837_C843_rev2_b”. It is not intended to encompass any test data presented in the filing.

2. Please stipulate if the internal photos are also to be held confidential. If so, please provide a revised confidentiality request to include the internal photos.
No, It is not requested that the internal photos be held confidential.

3. Please provide the required separate parts list or please provide a statement that the parts list is included in the schematics.
Please see statement uploaded as a separate exhibit.

4. FYI - Please note that the cover letter provided for this application states “RF Exposure Classification: Fixed. RF Exposure is addressed at the time of licensing since the antenna is not defined until that point.” Please note that as this is a signal booster or repeater it most likely operates under the license of the base station and does not itself get a license. As such rf exposure must be addressed at the time of certification and the maximum gain antenna must be known. Please explain how, as a repeater and or booster, this device is licensed and not operating under licensing of the base station. If this is not a licensed installation, please consider correcting the manual to properly address rf exposure (i.e. you may need to remove the licensing statement and simply keep the maximum antenna gain and separation statement as is).
This device does not require a separate license but operates under the BTS license. This statement in the cover letter is incorrect.

5. Please note that the advertising brochure states that the device “may include extending coverage areas in small towns, shaped coverage around man-made or natural obstacles, or extending a network beyond its primary target areas.” The manual indicates ‘repeater’ and the schematics show up and down converters. Please note that the test report (page 6) states the device is used to “enhance coverage of a cellular network within a building.” Please note that the definition of Booster says “An ‘in-building radiation system’ is a signal booster. These devices are not intended to extend the size of coverage from the originating base station.” Please note that the definition of a repeater is “Repeaters are different from boosters in that they can include frequency

translation and can extend coverage beyond the design of the original base station." Please note that repeaters do not necessarily demodulate or translate frequencies. Please clearly define the intent of this device in all documentation and please adequately address if this device is a signal booster (i.e. in building) or repeater. Please correct any documentation necessary to properly identify the device.

This is an excellent question. The primary use for this device is as a booster (ie. Not to extend the coverage as authorized in the original license). In this situation the device would operate under the license of the BTS. It is possible, however, that a service provider may use this device to extend coverage beyond the original license parameters, which, of course, would mean that they would require a modification to the original license or a new license for the extended coverage. So the best answer is that yes, the device could be used as a repeater (without frequency translation) but its primary use is as a booster. I am not sure how all of this impacts the grant of authorization notes. It does not appear to me that the rules prohibit authorization of a device that can operate as either a repeater or booster.

6. Please note that while the device does not appear to do any demodulation I do not know if the Digital Channel Module has demodulation capabilities on the chipset or not. Please verify that the DCM chipset in the device does not demodulate the input signal.

The DCM chipset does not demodulate the signal but down-converts the rf , passes it through an electronic filter, and then, using the same reference oscillator, up-converts the signal to its original frequency.

7. Please note that the test report states "adjusting rf input signal to obtain maximum rf output power produced the worst-case results". However, please note that the FCC guidance for amplifiers, boosters and repeaters states that for power measurements the "input drive level is at maximum input rating and maximum gain settings for all tests." Please explain and please affirm that the conditions specified in the FCC guidance have been met. If the input drive levels were not set at maximum, please retest as necessary to meet this requirement.

The rf input levels were set to -60 dBm, which is the maximum input drive level. The statement in the test report refers to the fact that worst-case operation was determined to be with the system gain set to a fixed level (97 dB which is maximum for the Node C/M 837) and adjusting the rf input drive level to -60 dBm (maximum rated rf input drive level with maximum gain). We did, however, check to make sure that with a lower gain setting and with a drive level exceeding -60 dBm, the spurious levels did not exceed those seen in the previously described configuration.

8. Please note that the FCC guidance for amplifiers states that conducted spurious emissions are to be tested at low, mid and high frequencies. Please verify that conducted emissions was performed at low, mid and high frequencies and that the input levels were at maximum drive levels.

The conducted emission levels were measured at low, mid, and high channels (1013, 384, 777 for IS-95 CDMA and 54, 384, 715 for W-CDMA.) with single carrier and maximum gain (97 dB) and -60 dBm rf input drive level. Worst-case proved to be out-of-band on the band edges.

9. Please note that in the intermod test data, page 45 of the report, the band edge 869MHz appears not to meet the -13dBm limit. The mask appears to cross the 869MHz line at approximately 42dBm from the 37dBm ref or level of -5dBm. However, the plot on page 47 appears to be a closer view using the 1% rule. As this affects the additional filtering of the single channel CDMA. please confirm if the plot on page 47 is a re-plot of the condition noted on page 45.

The plot on page 47 is actually a re-plot of the plot on page 45 but the plot on page 47 is with the third carrier turned off and the rf power of the two remaining carriers increased to +34 dBm/carrier. The plot on page 45 seems to indicate a failure simply because a resolution bandwidth of 100 kHz was used. The plot on page 45 was intended to show the three-signal intermodulation.

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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.