



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

October 20, 2006

RE:FCCID:
BCR-RPT-NCM843_ATCB004170 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 report (page 6 and 12) states that the antenna is determined at the time of licensing. Please note that in-building amplifiers do not get licensed and operate in conjunction with the licensed base transmitter (22.383 "Licensees may install and operate in-building radiation systems without applying for authorization.") This means that the max gain antenna must be specified in the documentation for certification as this directly affects MPE of the device. Please correct the test report pages to list the highest allowed gain antenna for use with the device. Please note that this antenna should be the same antenna as listed in the MPE report (i.e. a max antenna gain allowed of 21dBi). [Please see revised report and a revised MPE to reflect maximum antenna gain of 17 dBi. The unit and its associated antennas are always mounted outdoors on a permanent structure. We have amended the Install Manual to advise a maximum antenna gain of 17 dBi and minimum separation distance of 4 meters.](#)
2. Please note that in regards to item 1 above, the manual needs to provide rf exposure information for the installation of the device. The information also needs to include the maximum antenna gain shown in the MPE report (i.e. 21dBi). Please provide a manual that correctly identifies the rf exposure cautions for this in-building device. [See response to #1 above](#)
3. Please note that when measuring band edge data the lowest res bw settings would be 1% of the OBW of the device. Please note that in the case of a 2 carrier signal this would be 30kHz. Please note that the plots on pages 45 show the use of a res BW of only 20kHz (i.e. 10kHz less than allowed). Please explain and correct as necessary. Please review the report for similar corrections that may be necessary. [In the past FCC has ruled that when multiple carriers are transmitted, the 1% relates to 1% of one carrier. The IS-95 CDMA carrier necessary bandwidth is 1.23 MHz thus the minimum RBW that could be used is 12 kHz. The reason given for this is that the emission measurement that is being made is the edge of the single carrier closest to the band edge and the inter-modulation product of the two carriers. The idea is that the RBW not be less than 1% of the bandwidth of the signal being measured\(the 1.23 MHz wide inter-modulation product in this case\). My client would like to get a ruling from FCC on this if you deem it necessary.](#)
4. Please note that at least 6 readings for spurious emissions is expected for FCC certification. While these may include the noise floor readings of harmonics, 6 readings should still be provided in the report. Please adjust the report to provide at least 6 spurious emissions readings. [Please see amended report with additional noise floor readings.](#)
5. Please note that the documentation indicates that the amplifier is intended for use with 3G phones

(i.e. the brochure states operation for to “CDMA2000, to 1xRTT, to EV-Do and beyond.”). Please note that boosters are to be tested to each of the modulation schemes for which they are intended to be used. Please confirm that the input to the booster was tested using compliant 3G technology signals. Please provide data for CDMA2000, 1xRTT, 1xEV-Do and any other modulation scheme for which this device is to be used. Alternately, please explain and give justification as to why the CDMA input signal used meets the requirements to test all modulations applicable. The brochure is a general marketing piece and refers to the capability of several models in addition to the Node C843 and Node M843. The Node C843 operates with IS-95 CDMA and the Node M843 operates with W-CDMA (referred to as UMTS in Europe) signals. The Node C was tested with an IS-95 signal as described on pages 16 and 17 of the test report. The Node M was tested with a W-CDMA signal as described on page 17 of the test report. The W-CDMA signal is a 3G signal. Because of the way the Node C and Node M detect the pilot of each of these signals, the system will only repeat these signals.

Dennis Ward
<mailto:dward@AmericanTCB.com>

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.