



August 25, 2003

RE: Netgear Incorporated, FCC ID: PY3-ANT24BX

Our responses to your comments on the above referenced application, are embedded with the issues that you raised.

1) The sample label shows the labeling placed on the booster/amplifier. Due to the nature of the system we would still recommend placing the label on the amplifier as well. However, the labeling should be placed on the "main control unit" as specified by 15.19(a)(4). Please note that the original FCC ID placed on the access point is no longer considered valid once the booster/amplifier has been added to the system. Please provide new labeling of the access point when sold as part of this system.

The label will be placed on both the booster and the ME103 Access Point. Updated label schematic and label locations have been uploaded to the ATCB website.

2) Please explain the use of the FCC logo on the "booster" label. It does not appear that the FCC logo is necessary on the booster/amplifier label.

The FCC logo has been removed from the label on the booster and replaced with the two-part statement. The revised label and label location file has been uploaded to the ATCB website.

3) Please confirm that this will only be sold as a system as covered by this application (Access point +Optional DC Injector + Antenna + Listed Cables + Booster/Amplifier).

A letter of attestation has been uploaded to ATCB that confirms that the system is both marketed and sold as a system and that the bi-directional amplifier is not made available for individual sale.

4) It appears that the AC/DC adapter contains a ferrite on this cable. Please confirm.

The device does not include a ferrite. The test lab performed radiated and conducted tests with and without the ferrites. Please refer to the letter of explanation from Sporton and updated report containing data taken without the ferrites installed.

5) The operational description contains two sections, Case 1 and Case 2. It is assumed that this device and testing will only be covered by Case 2. However the FCC ID in the operational description does not appear to match the FCC ID in this application. Please explain.

You are correct in that the description for Case 2 is for this application. The ID for Case 2 does not match the ID for this application because the operational description was written before the FCC ID had been finalized. The Operational Description has been modified to reflect the correct IDs for both Case 1 and Case 2.

6) The schematics appear incomplete. Given that this must be approved as a system, the schematics will need to be provided for all devices in the RF TX path. This includes the access point, DC injector, and booster/amplifier. Please provide the missing schematics.

As the AP has already been approved I did not think it was necessary to uploaded the AP schematics – my mistake. The Access Point and dc injector schematics have been uploaded to the ATCB website.

7) It appears that the external photographs show 8 different antennas, yet the application is requesting certification on 9 antennas. Please provide photographs of the missing antenna. It would also be helpful if the photographs of the antennas were labeled showing which antennas correspond to the models listed.

There are 10 antennas in this application (the Panel antennas are being removed from this application). A file containing the specification for each antenna has been uploaded, as has a revised letter detailing all of the antennas to be listed. The application is to cover the following antennas:

JOYMAX IW-144	2dBi Omnidirectional Antenna
ANTENNIQUES MCS-003A	3dBi Omnidirectional Antenna
JOYMAX IW-152RS	4dBi Omnidirectional Antenna
SENAO NAS-T0405(N)	4dBi Omnidirectional Triband Stand Antenna
ANTENNIQUES MCS-004	5dBi Omnidirectional Antenna
SENAO NAS-2405(N)	5dBi Omnidirectional Stand Antenna
ANTENNIQUES MCS-004A	7dBi Omnidirectional Antenna
SENAO SAG-T0909	8.5dBi Omnidirectional triband Antenna
SENAO SAG-2409	9dBi Omnidirectional Antenna
SENAO NAP-2405(N)	5dBi Ceiling Antenna

8) Power meters listed in the test report appear to be out of calibration (page 155). Please explain.

The report has been updated to correct this mistake. The power sensor's and power meter's calibration were current at the time of test..

9) Because of the concerns with compliance regarding certain antennas and minimum cable lengths, how will these cable lengths and proper positioning be assured upon installation? It appears that this system should require professional installation to ensure the proper minimum cable lengths are used and installed properly. If the system is intended to be professionally installed, please provide a cover letter addressing the following items below. Otherwise, please explain how it is assured that the proper cable lengths are used (i.e., system only sold as a kit that includes proper cables. However what keeps the user from placing the long on the RF booster input, and the short cable on the RF booster output?).

The system is provided with the appropriate 1.5m cable lengths. As this is the shortest cable provided by Netgear, the end user cannot mistakenly use the wrong minimum cable length between the various units.

Please also refer to the answer for (10) below.

10) It is not clear if all connections (access point, DC injector, Booster, Antennas) are non-standard connectors. These must all be non-standard unless the system is professionally installed (see #9). Please comment.

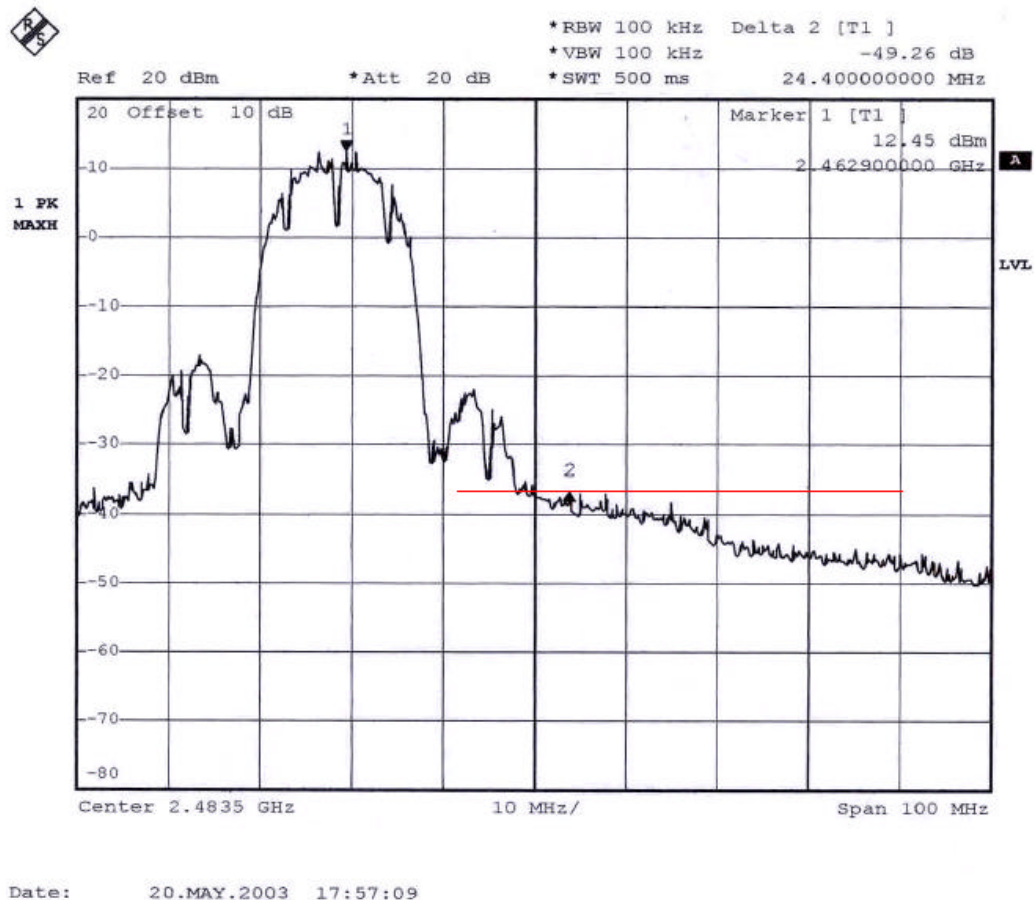
All connectors on the ME103, dc injector and booster are reverse SMA connectors. All antennas use either reverse SMA male connectors (and so can connect directly to the rf output of the bi-directional amplifier), reverse SMA female connectors (which require the use of a cable to connect between the amplifier and the antenna) or reverse N connectors.

The antennas with a reverse N-connector are provided with a reverse SMA to reverse N adapter.

By providing the antennas in this way it is ensured that at least a 1.5m cable (the shortest available cable provided by Netgear) is used between antenna and amplifier for configurations that require a minimum cable length between amplifier and amplifier.

11) The band edge measurement above 2.4835 GHz appears that the marker 2 may not have been on the highest measurements above 2.4835 GHz band edge. Given how close the results were (0.2 dB from the limit), please verify that the marker was correctly positioned on the highest point above 2.4835 GHz.

The marker 2 is on the correct point on the graph. The tip of the marker's triangle and not the center/base of the triangle indicates the trace value. The tip is above all other out-of-band signals

Plot2 (Channel 11) ☐

12) The test report appears to show data and plots up to 5 GHz. Please confirm that the device was scanned up to approximately 25 GHz. Note that from the plots provided, it appears that there may not have been the necessary dynamic range to make measurements above 5 GHz. Please explain.

Sporton (the test facility) confirmed that the radiated spurious emissions were investigated to 26GHz by using the antenna in close proximity to the device under test (thereby avoiding the noise floor/dynamic range limitations you mention). No significant signals were observed above the second harmonic. A letter attesting to this fact is provided by Sporton.

13) The RF exposure information appears to be missing information regarding the 3 dBi Dipole Antenna, 4 dBi Dipole Antenna, and the 9 dBi Omni-directions tri-band antenna. Please add this information to the RF exposure.

The MPE calculations document I have contains all of the above. I will re-upload that document.

14) Please provide a users manual for this system that includes proper FCC statements and RF exposure conditions.

The user's manual for the system has been uploaded. It includes the rf exposure warning, the FCC statements and also explains that the bi-directional amplifier is only for use with the device with which it is sold.

15) It appears that the patch antennas may have been tested with the antennas laying down, which may not allow proper measurement for spurious emissions that may be emitted from the main beam-width of the antenna (not all photographs were provided for all final configurations measured). Note that the highest fundamental measured was for the 9 dBi dipole and not the 18 dBi gain. It is expected that the highest fundamental would normally occur for the highest gain antenna. Please comment. Note that this fact could affect the band-edge and spurious emissions measured.

The patch antennas are being removed from the scope of this application to allow time for re-testing. If the results from the re-tests demonstrate that the use of these antennas meets the requirements of FCC 15.247 then a Permissive Change will be filed to add them.

The following files have been uploaded to the ATCB website to support the above responses:

- Access Point Schematics.pdf
- DC Injector Schematics.pdf
- Antenna List.pdf
- antenna specs Part 1a (Omni).pdf
- antenna specs Part 1b (Omni).pdf
- antenna specs Part 1c (Omni).pdf
- antenna specs Part 2 (Ceiling Antenna).pdf
- F341403-01 Wireless Access Point Report.pdf
- Test Configuration Photos (Revised).pdf
- Label and Label location (revised).pdf
- MPE Calculations (Revised).pdf
- Operation Description and Specifications (Revised).pdf
- Response.pdf
- Test Lab Issues Response Letter.pdf
- Letter of Attestation.pdf
- Users Manual (Final revision).pdf

If you have any additional questions please do not hesitate to contact me via doc@elliottlabs.com.

Regards,



Mark Briggs
Director of Engineering