Application Document for
FCC Part 15, Subpart E (Intentional Radiator)
Class II Permissive Change

Model Number: WM3B2915ABG

Document Number: FCC 19-0293-0

FCC ID: ANO20040601CX2

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Outline of Submission

1.   Objective

This is a certification compliance test report for **Class II permissive change** of the following LMA transmitter device pursuant to FCC Part 15 subpart E (Intentional Radiator).

- ● FCC ID   : **ANO20040601CX2**
- ● Model Number   : WM3B2915ABG
- ● Advertising Name : Intel PRO/Wireless 2915 ABG Mini-PCI Adapter
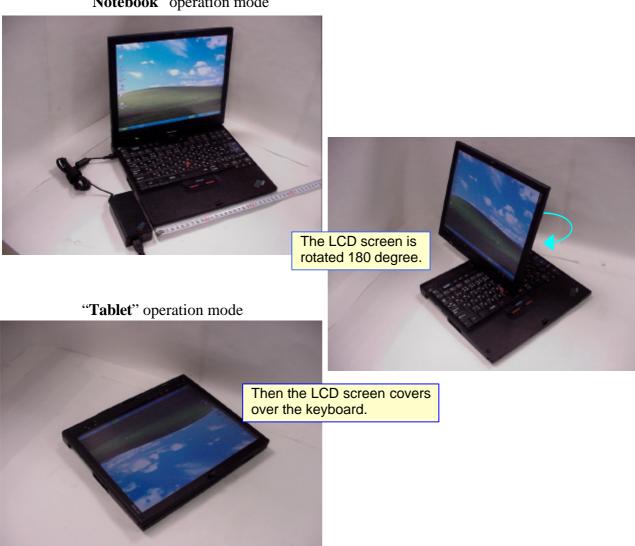- ● The granted dates : October/07/2004
                        December/17/2004

The following new host PC antenna is to be added, and it requires SAR evaluation and needs the **category change from "Mobile" to "Portable"** device due to the tablet operation mode shown by the photos below.

- ● Certified antenna systems: Laptop PCs ThinkPad T40, R50, X30 and X40 Series
- ● The **new** antenna system: Laptop PC ThinkPad X41 Tablet Series

"**Notebook**" operation mode

The LCD screen is rotated 180 degree.

"**Tablet**" operation mode

Then the LCD screen covers over the keyboard.

There is no hardware nor electrical modification made to the applying modular transmitter itself. Therefore some exhibits are omitted as follows.

[Submittal documents]

- Product Labeling : included
- LAM Qualification : omitted
- Internal Photos : omitted
- External Photos : omitted
- Block Diagrams : omitted
- Schematic Diagrams : omitted
- Parts List : omitted
- Circuitry Descriptions / U-NII device qualification: omitted
- Electronic Handshake BIOS Lock logic : included
- Emission Test Report : included
- SAR Test Report : included
- Test Setup Photos : included
- RF Exposure : included
- Users Manual : included
- New Antenna system Info. : included

2.　Product Description

The applying modular transmitter device is an OEM mini-PCI wireless LAN card supplied by Intel Corporation. The modular device complies with the following transmission modes.

- **IEEE802.11a (5180MHz ~ 5320MHz band OFDM)**
- IEEE802.11a (5745MHz ~ 5825MHz band OFDM)
- IEEE802.11b (2412MHz ~ 2462MHz band Direct Sequence Spread Spectrum)
- IEEE802.11g (2412MHz ~ 2462MHz band OFDM)

This application includes 5.2GHz band OFDM mode only. The other three modes are subjected to the FCC 15 subpart C (DTS device), and are to be certified with a separate application as **composite** device.

3.　Installation of the applying transmitter

A unique electrical connector (so called "**Electronic Handshake**" BIOS Lock) is employed for both applying modular device and host units to satisfy the FCC Part 15.203 or RSS-210 §5.5, and RSS 6.2.2 q1(i). This mechanism enables users to install the applying LMA transmitter to the specified host units.

The detail explanation of the unique coupling between the LMA transmitter and antenna systems is shown in the separate exhibit "Confidential_e-Handshake.pdf", however IBM would like to hold it in confidence to maintain the secure "unique operability" with the applying device and the host antenna systems.

The Electronic Handshake BIOS Lock function is also effective for the user's maintenance in replacing a broken card with a spare part.

4.   Co-located Transmitters

The applying LMA transmitter collocates with the following Bluetooth module and transmits RF frequency simultaneously.

   - FCC ID: ANO20040700HER   (Model: J07M067,   IBM Integrated Bluetooth IV with 56 Modem)

The applying modular transmitter was already certified in use of multiple transmission with this co-located Bluetooth module on December/17/2004 for the existing host antenna systems.

The emission test and SAR measurements reported in this application were performed for the new host antenna system (X41 Tablet) with the both applying modular transmitter and co-located Bluetooth module in active.

5.   Related Submittal(s)/Grant(s)/Notes

●   During the applying modular device stops RF transmission, the host unit with full peripheral devices including the applying modular device is classified as an unintentional radiator, Digital Device under the FCC Part 15 Subpart B or the Industry Canada Class B Emission Compliance (ICES-003), and subject to DoC.

●   The Bluetooth antenna of ThinkPad X41 Tablet PC used for the model J07M064 (FCC ID: ANO2004 0700HER) is subjected to Class I Permissive Change pursuant to the ET Docket 03–201; FCC 04-165, July 12/2004 and Federal Register / Vol. 69, No. 172, September 7/2004, since the antenna is very similar meander type to the existing granted antenna systems and the peak gain of it does not exceed the maximum certified value as follows.

Host PC model	Designator (Parts Number)	Antenna type	Granted date	Cable type and length	Peak Gain
ThinkPad X41 Tablet Series	91P6910	Meander Antenna		Coax 400 mm	2.37 dBi
ThinkPad T40 Series, LCD 14 inch model	91P6901		December/09/ 2004	Coax 265 mm	1.20 dBi
ThinkPad T40 Series, LCD 15 inch model	91P6842			Coax 230 mm	**2.84** dBi
ThinkPad R50 Series	91P6817			Coax 265 mm	2.16 dBi
ThinkPad X30 Series	46L4680			Coax 180 mm	1.80 dBi
ThinkPad X40 Series	13N5744			Coax 341 mm	1.99 dBi

●   The host device ThinkPad X41 Tablet Series employs a radio digitizer function in LCD screen that is able to sense the Digitizer Tablet Pen shipped associated with the host PC. Though the transmission power of the digitizer is very week (max. 0.065pW), it is subjected to the intentional radiator regarding FCC Part 15 Subpart C and IC RSS-210. The digitizer device is to be certified with a separate application for FCC ID: ANOX41T or IC: 349E-X41T before the announcement of the host device.