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

Model Number: WM3B2915ABG

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FCC ID: ANO20040601CX2

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Outline of Submission

1. 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)

The 5180MHz∽5320MHz band OFDM mode is subjected to the FCC 15 subpart E (U-NII device), and is to be certified with the separate application as **composite** device.

2. Objective of Class II change submission

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

- FCC ID : **ANO20040601CX2**
- Model Number : WM3B2915ABG
- Advertising Name : Intel PRO/Wireless 2915 ABG Mini-PCI Adapter
- The last grant date : October/07/2004

This Class II permissive change application includes the following four objectives.

a. The following new antenna systems (host PC devices) are to be added in this Class II change application.

- IBM ThinkPad **X30** Series
- IBM ThinkPad **X40** Series

b. The antenna system previously granted for the host PC device, IBM ThinkPad T40 Series, LCD 14 inch model was modified to comply with the RoHS environmental direction.

Host PC	Designator	Manufacture	Antenna type	Cable type and length	Gain (dBi)
IBM ThinkPad T40 Series LCD 14" model	62P4204 91P6900 *1 Main antenna	Foxconn Electronics Inc. (R.O.C.)	Dual Band Meander Antenna	Coax 745 mm	2400-2500MHz 0.99 dBi (peak) 5725-5850MHz -0.23 dBi (peak)
	62P4203 91P6898 *1 Auxiliary antenna		Dual-Band Coupled Floating Element Antenna	coax 845 mm	2400-2500MHz -0.48 dBi (peak) 5725-5850MHz -0.37 dBi (peak)

*1: Non-lead soldering antenna according to the RoHS environmental direction. The radiation characteristics (gain and Omni directional pattern) are the same regardless with-lead or non-lead soldering.

c. As per the request of supplier (Intel), some parts of the applying modular transmitter were replaced. (Refer to the separate Intel Confidential documents "Parts List" and "Engineering Change" exhibits.)

The reason of this modification is to stable the power regulator when a host PC device enters in "power saving mode".
Since this engineering change is not related to any radiocommunication function at all, it does not affect to the granted test results.
The separate "Test Report" includes the comparison of the previous data and new one to prove no electrical change was made.

d. The following new co-located Bluetooth modular transmitter is to be added, then the radiated spurious in multiple transmission with the applying WLAN and Bluetooth modules was examined.

- FCC ID: **ANO20040700HER** (under certification process separately)

3. Installation of the applying transmitter

The applying module is pre-installed by IBM to the specified host PC devices (IBM ThinkPad **T40, R50, X30** or **X40** Series). Also **user installable** option cards are provided.

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 user to install the applying LMA transmitter to the specified hosts (IBM ThinkPad T40, R50, X30 or X40 Series).

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 IBM 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 for T40, R50, X30 or X40 Series.

4. Co-located Transmitters

The applying LMA transmitter collocates with **one of** the following Bluetooth modules and transmits RF frequency simultaneously.

- FCC ID: ANO20020100MTN (IBM Integrated Bluetooth III with 56 Modem) ; granted
- FCC ID: ANO20040700HER (IBM Integrated Bluetooth IV with 56 Modem) ; new

As for the RF safety evaluation, refer to the separate exhibit "RF_Exposure.pdf ".

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.

6. Submittal documents

● Product Labeling	Yes	
● LAM Qualification	omitted	(identical with the original filing)
● Internal Photos	omitted	(ditto)
● External Photos	omitted	(ditto)
● Block Diagrams	omitted	(ditto)
● Schematic Diagrams	omitted	(ditto)
● Parts List	Yes	(replaced with the new one)
● Circuitry Descriptions of LMA transmitter	omitted	(ditto)
● Electronic Handshake BIOS Lock logic	Yes	
● The new antenna system Info.	Yes	
● Test Report with the new antenna systems	Yes	
● Test Setup Photos	Yes	
● RF Exposure evaluation	Yes	
● Users Manual	Yes	