

RF Exposure Evaluation

The built-in antenna connected to the applying modular transmitter is located at the left hinge portion between LCD and keyboard of the host device (IBM ThinkPad T40 Series, LCD 15 inch model).

The antenna separation from person's body becomes very close when an user operates the PC on one's lap (approximately 2.5 cm). Therefore the applying transmitter device with the subjected antenna is categorized as a portable device by FCC CFR 47 section 2.1093.

The conducted output power of the applying Bluetooth transmitter is 2.34mW (3.7dBm) and the antenna gain is 2.84 dBi. Both conducted and radiated powers are far below 50mW.

With reference to OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01), Section 3, footnote 14, the applying modular transmitter with this built-in antenna satisfies the RF exposure evaluation regarding CFR 47 Part 15.247(b)(5) without a SAR compliance test report.



As for the **grant condition** concerning the approved co-locating transmitter devices, IBM guide to customers with a Web site shown in the next page.

IBM Web site for user's guidance concerning the co-located transmitters

Note) The info for the applying LMA transmitter is not available until the product announcement.

<http://www.pc.ibm.com/qtechinfo/MIGR-43693.html>

The screenshot shows the IBM support website interface. At the top is the IBM logo and a search bar. Below the logo is a navigation bar with links: Home, Products & services, Support & downloads, and My account. A secondary navigation bar includes 'Select a language', 'PC support home', 'Login', 'Profile', 'My page', 'Ask an expert', and 'Help'. The main content area is titled 'TP Wireless Systems – Approved wireless Mini PCI options and additional RF option devices receive FCC certification'. It includes a section for 'Applicable countries/regions' (United States) and 'Service hints & tips'. The core of the page is a table titled 'Affected configurations' which lists various LMA (Limited Modular Approval) adapters, their FCC IDs, and the approved ThinkPad models. The table also indicates whether PC options are allowed for multiple transmission (Yes/No/Not Recognized). Below the table, there are notes explaining the 'NG' status and providing links for FCC IDs #1, #2, and #3. A 'Solution' section follows, explaining that the supplementary document of ThinkPad's 'Service and Troubleshooting Guide' contains regulatory information. Finally, a 'Use of wireless options' section provides instructions on how to use wireless features, including visiting the IBM site and following RF safety instructions.

TP Wireless Systems – Approved wireless Mini PCI options and additional RF option devices receive FCC certification

Applicable countries/regions
United States

Service hints & tips

Affected configurations
Additional RF Option devices receive FCC certification for use on:

LMA (Limited Modular Approval) adapters	FCC IDs	Approved ThinkPad models	PC options allowed multiple transmission		
			#1	#2	#3
IBM High Rate Wireless LAN Mini PCI Adapter	ANOM3AWE56GA	R32 Series T30 Series X30 Series (X30)	NG	O	O
Cisco Aironet Wireless 802.11b	ANOU58H004	R32 Series T30 Series X30 Series (X30)	NG	O	O
		R40 Series X30 Series (X31)	O	O	O
		T40 Series	O	NG	O
Intel PRO/Wireless LAN 2100 3B Mini PCI Adapter	ANO20020201CLK	R50 Series T40 Series	O	NG	O
		R40 Series X30 Series (X31)	O	O	O
		X40 Series	O	NG	NG
IBM 11a/b/g Wireless LAN Mini PCI Adapter	ANO20030400LEG	R50 Series T40 Series	O	NG	O
		R40 Series X30 Series (X31)	O	O	O
		X40 Series	O	NG	NG
IBM High Rate Wireless LAN Mini PCI Adapter III	ANO20020200BRX	G40 Series	NG	NG	O
		R40 Series	O	O	O

NOTES:

View [ThinkPad Wireless Systems II – Approved wireless Mini PCI options and additional RF option devices receive FCC certification](#)

NG: Not authorized to use by the FCC rule, or not recognized by BIOS.

#1: FCC ID: ANO20020100MTN ; [IBM Integrated Bluetooth III with 56K Modem](#)

#2: FCC ID: PI4BT-ULTRA ; [Bluetooth UltraPort Module from IBM](#)

#3: FCC ID: PI4BT-IBM-PCII ; [Bluetooth PC Card II](#)

Solution

The supplementary document of ThinkPad's "Service and Troubleshooting Guide" has the following information in "Wireless regulatory information – USA Federal Communications Commission (FCC)" section:

Use of wireless options


Please make sure of the following conditions on use of wireless features.

1. Visit the IBM site at www.ibm.com/pc/qtechinfo/MIGR-43693.html and confirm the updated list of RF option devices that have been approved to cooperate with the integrated wireless feature.
2. When you use any other RF option device that is not listed on the IBM site, all other wireless features including the integrated transmitter in your ThinkPad computer are required to be turned off.
3. Users are requested to follow the RF Safety instructions on wireless option devices that are included in the RF option device's user's manual.

Document id: MIGR-43693
Last modified: 2003-01-31
Copyright (C) 2003 IBM Corporation

About IBM | Privacy | Legal | Contact

<http://www.pc.ibm.com/qtechinfo/MIGR-53286.html>



[Home](#) | [Products & services](#) | [Support & downloads](#) | [My account](#)

[Select a language](#)
[PC support home](#)
[Login](#)
[Profile](#)
[My page](#)
[Ask an expert](#)
[Help](#)

PC support home
Warranty lookup

Related links:

- Support phone list
- Business Partner support
- IBM PC Institute
- IBM Publications Center
- Find a Business Partner
- IBM Supports
- Microsoft Service Packs

TP Wireless Systems – Approved wireless Mini PCI options and additional RF option devices receive FCC certification

Applicable countries/regions

United States

Service hints & tips

Affected configurations

Additional RF Option devices receive FCC certification for use on:

LMA (Limited Modular Approval) adapters	FCC IDs	Approved ThinkPad models	PC options allowed multiple transmission		
			#1	#2	#3
IBM 11b/g Wireless LAN Mini PCI Adapter	ANO20030500CMR	R50 Series	O	NG	O
		T40 Series	O	NG	O
		X30 Series (X31)	O	O	O
		X40 Series	O	NG	NG
Intel PRO/Wireless 2200BG Mini-PCI Adapter	ANO20040501CX2	R50 Series	O	NG	O
		T40 Series	O	NG	O
		X30 Series (X31)	O	O	O
		X40 Series	O	NG	NG

NOTES:

View [ThinkPad Wireless Systems I – Approved wireless Mini PCI options and additional RF option devices receive FCC certification](#)

NG: Not authorized to use by the FCC rule, or not recognized by BIOS.

#1: FCC ID: ANO20020100MTN ; [IBM Integrated Bluetooth III with 56K Modem](#)

#2: FCC ID: PI4BT-ULTRA ; [Bluetooth UltraPort Module from IBM](#)

#3: FCC ID: PI4BT-IBM-PCII ; [Bluetooth PC Card II](#)

Solution

The supplementary document of ThinkPad's "Service and Troubleshooting Guide" has the following information in "Wireless regulatory information – USA Federal Communications Commission (FCC)" section:

Use of wireless options

Please make sure of the following conditions on use of wireless features.

1. Visit the IBM site at www.ibm.com/pc/qtechinfo/MIGR-53286.html and confirm the updated list of RF option devices that have been approved to cooperate with the integrated wireless feature.
2. When you use any other RF option device that is not listed on the IBM site, all other wireless features including the integrated transmitter in your ThinkPad computer are required to be turned off.
3. Users are requested to follow the RF Safety instructions on wireless option devices that are included in the RF option device's user's manual.

Document id: MIGR-53286
Last modified: 2003-01-31
Copyright (C) 2003 IBM Corporation

[About IBM](#) | [Privacy](#) | [Legal](#) | [Contact](#)