

# Host Unit Antenna Information

## for

### ThinkPad T40 Series

### ThinkPad R50 Series

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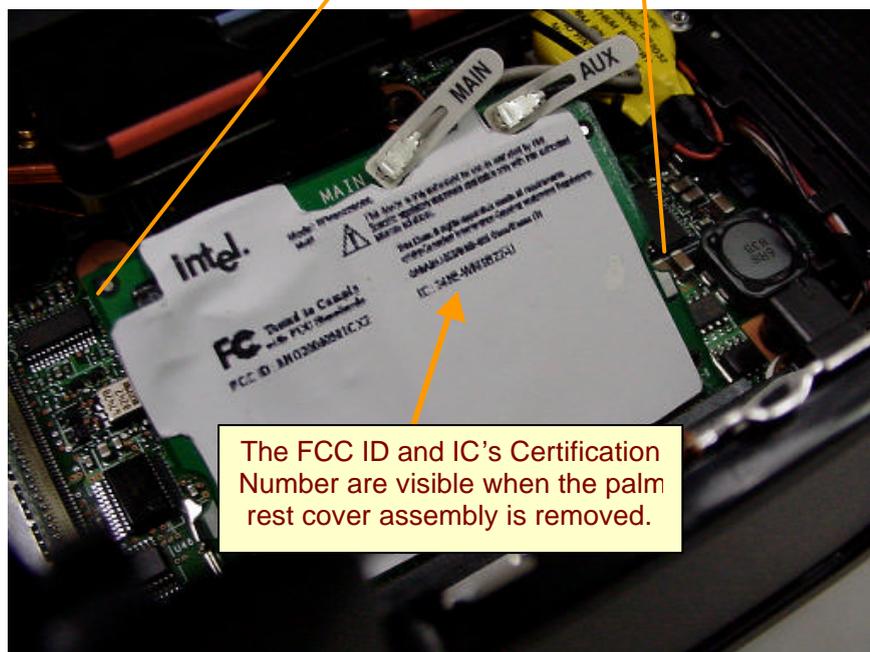
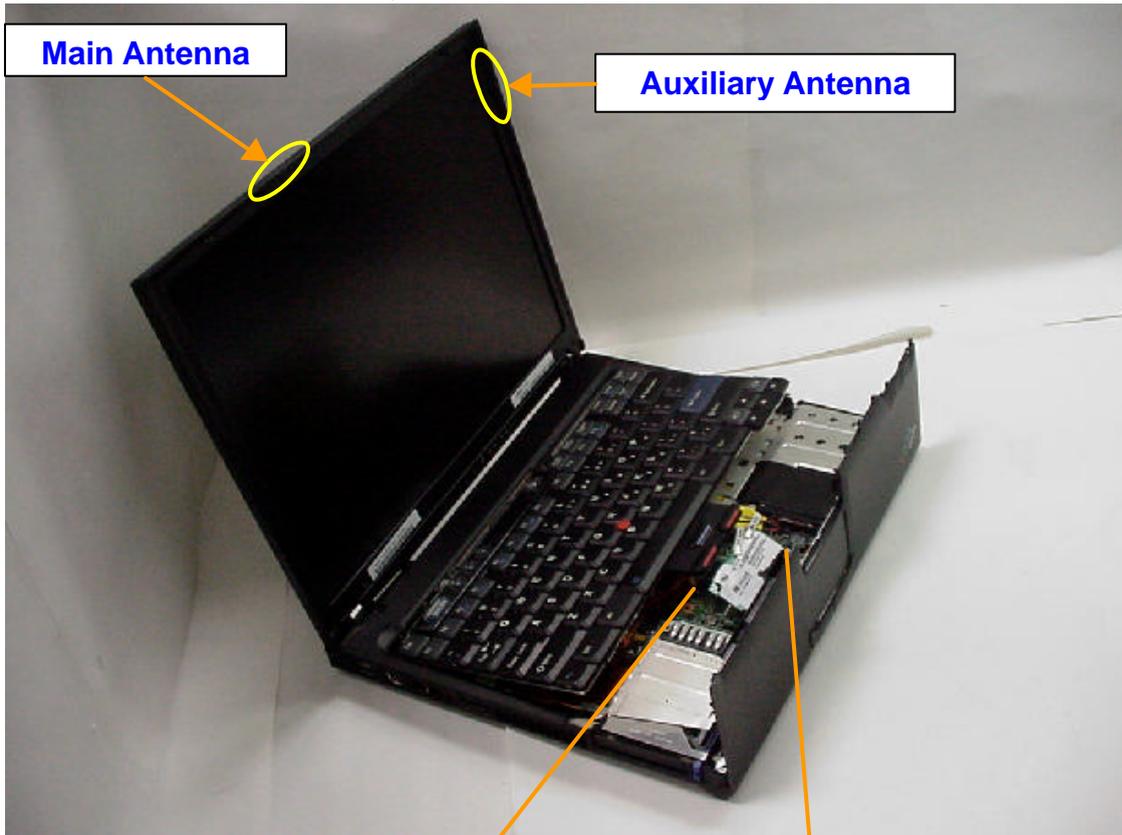
# 1. Host PC Information

## IBM ThinkPad T40 Series and R50 Series

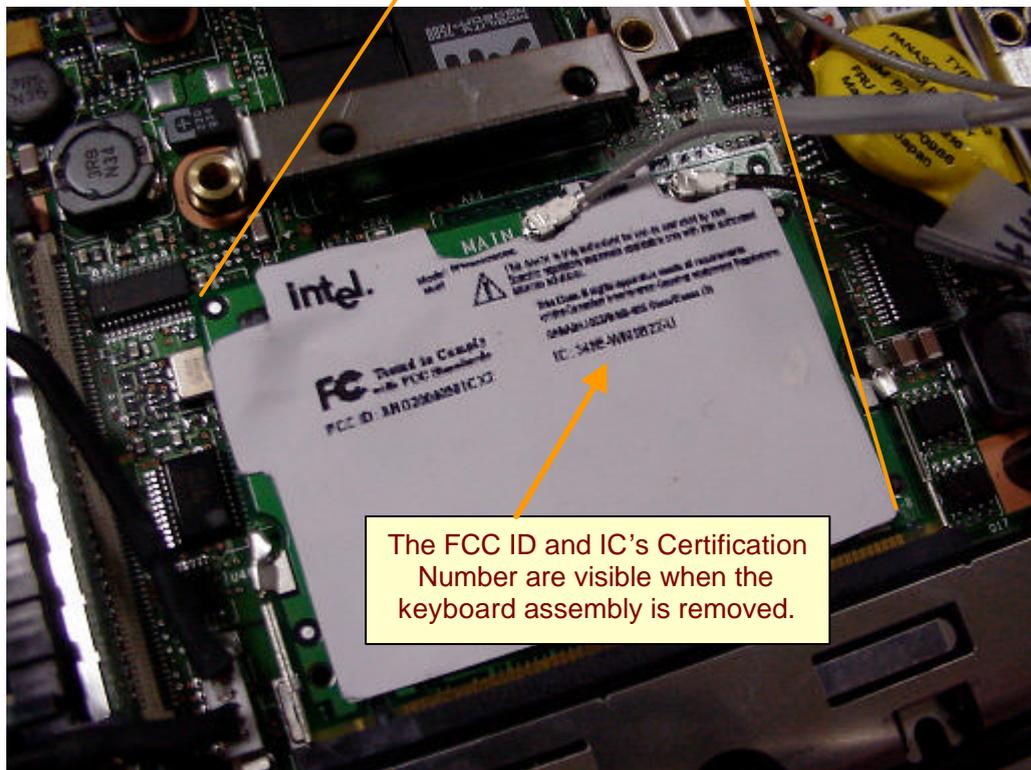
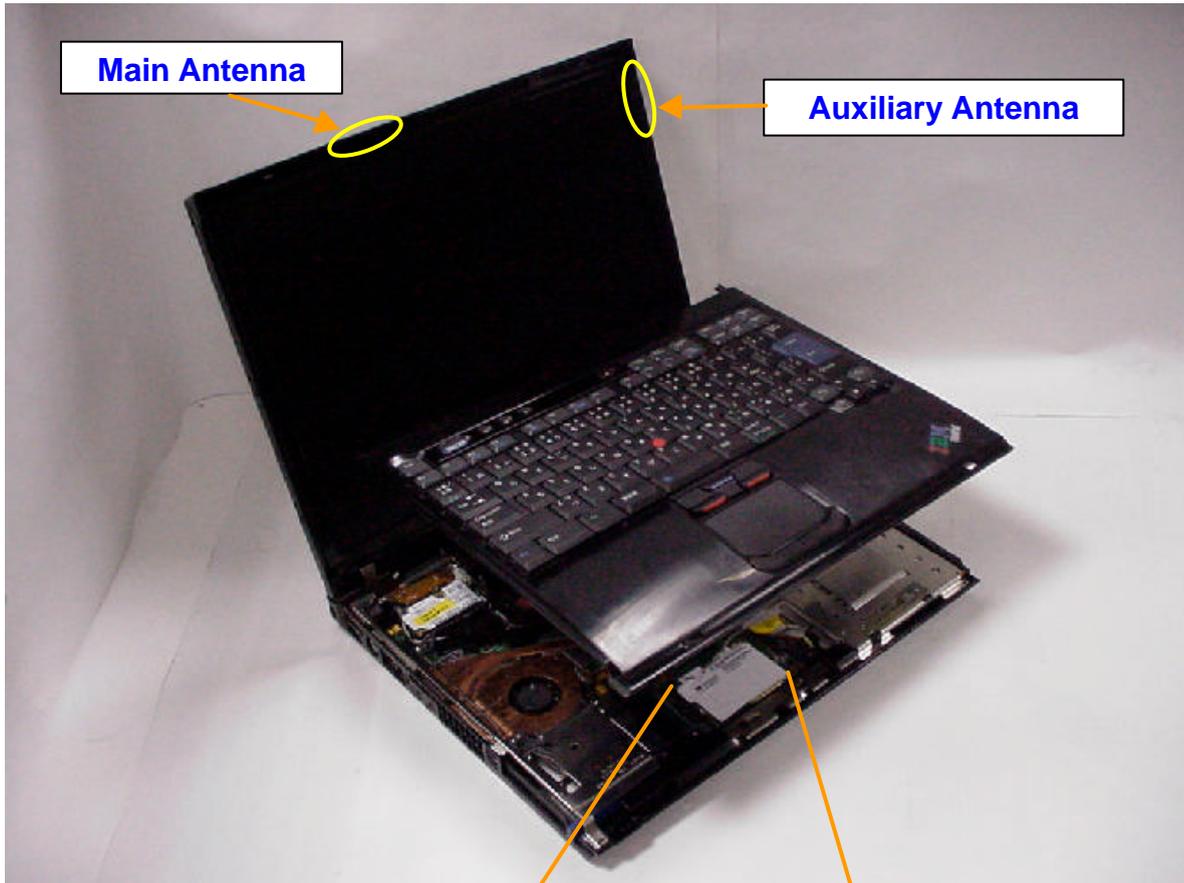
The host PCs (IBM ThinkPad T40 Series and R50 Series) are designed with the same conceptual hardware configuration of full size laptop PC.

The main antenna is built in the top portion of the LCD, and the auxiliary antenna is built in the right side of the LCD. Those diversity antennas are not used for transmission simultaneously. One of the antennas is selected automatically or manually to have a good quality of radio communication. The selected antenna performs transmission or receiving in half duplex alternatively.

IBM ThinkPad T40 Series, LCD 14 inch model



IBM ThinkPad T40 Series, LCD 15 inch model, and  
IBM ThinkPad R50 Series, LCD 14 and 15 inch models



ThinkPad T40 Series  
LCD 14 inch



ThinkPad T40 Series  
LCD 15 inch



ThinkPad R50 Series  
LCD 14 inch



ThinkPad R50 Series  
LCD 15 inch



## 2. Host PC Labeling

### 2.1 Labeling of T40 Series

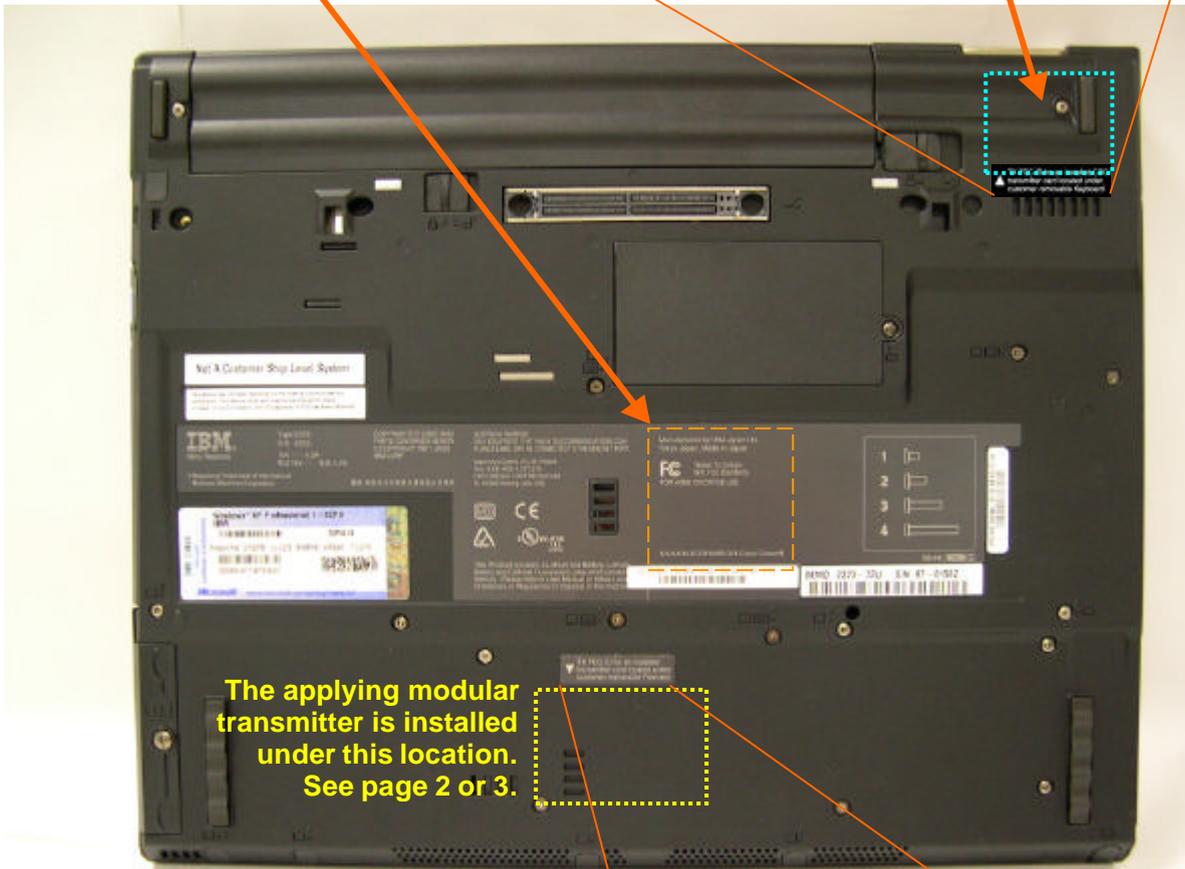
Manufactured by IBM United Kingdom Ltd.  
Greenock Scotland, Made in U.K.

**FC** Tested To Comply  
With FCC Standards  
FOR HOME OR OFFICE USE

CANADA ICES/NMB-003 Class/ClasseB

The host device (ThinkPad T40 Series) supports the applying transmitter and a built-in type Bluetooth LMA transmitter which was certified separately (FCC ID: ANO20020100MTN, Feb. /26/2003).

**▲ TX FCC ID for an installed CDC transmitter card located under customer removable Keyboard**



The applying modular transmitter is installed under this location. See page 2 or 3.

**Bottom view, Front side**

**▼ TX FCC ID for an installed transmitter card located under customer removable Palmrest**

## 2.2 Labeling of R50 Series

Manufactured for IBM Corporation  
Armonk, New York, USA  
Made in Mexico



**FC** Tested To Comply  
With FCC Standards  
FOR HOME OR OFFICE USE

CANADA ICES/NMB-003  
Class/Classe B

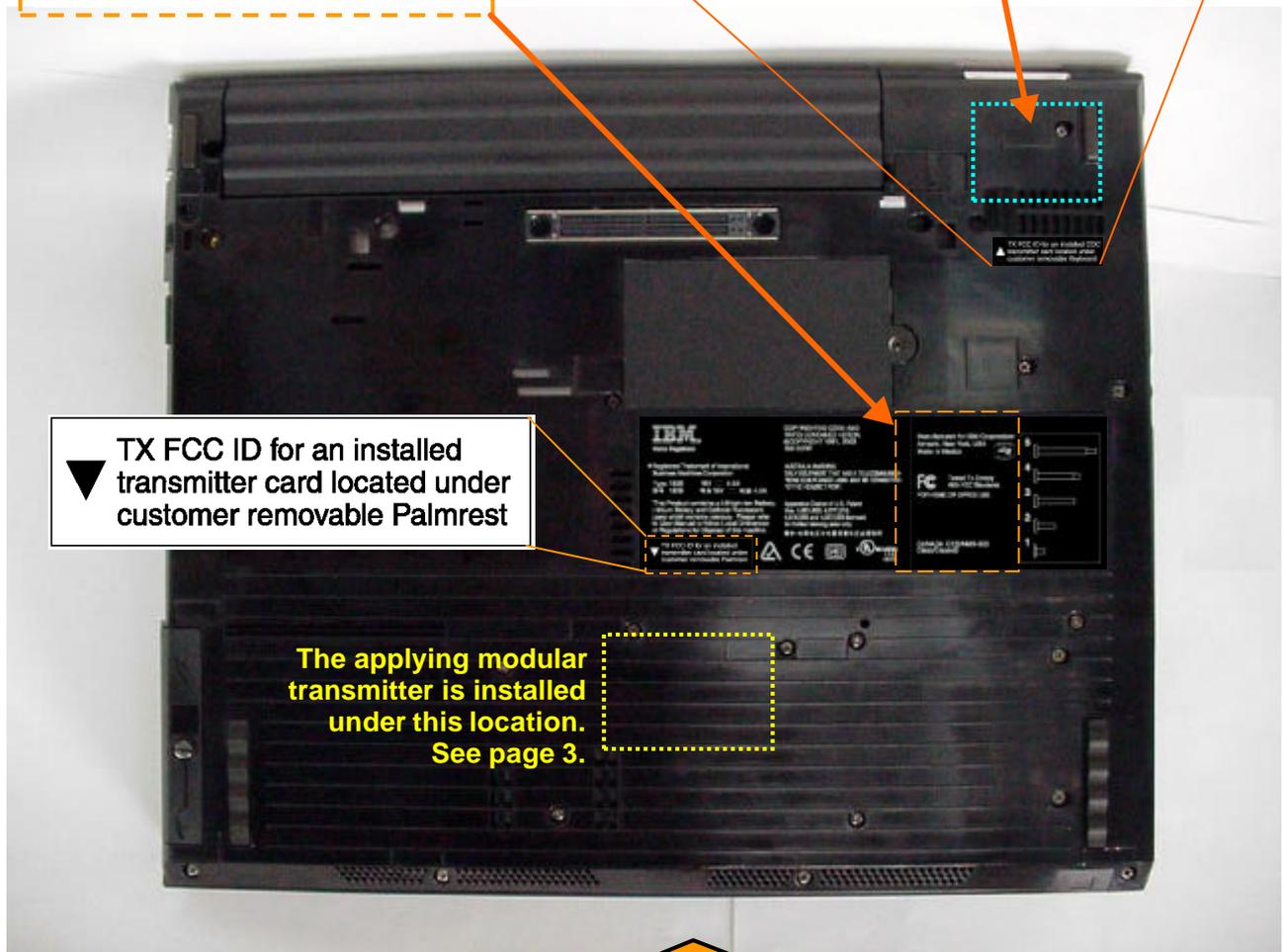
The host device (ThinkPad T40 Series) supports the applying transmitter and a built-in type Bluetooth LMA transmitter which was certified separately (FCC ID: ANO20020100MTN, Sep./29/2003).

▲ TX FCC ID for an installed CDC transmitter card located under customer removable Keyboard

▼ TX FCC ID for an installed transmitter card located under customer removable Palmrest

The applying modular transmitter is installed under this location. See page 3.

Bottom view, Front



## 3. Antenna Specifications

### 3.1 Transmission Antenna assembly overview

Note 1): The previous naming of “**Inverted F**” is updated to the recent one “**Meander**”.

Note 2): 2a. Includes all cable losses.

2b. Antenna type should be Omni Directional and have gain of 2.0 dBi or less for IEEE802.11b (2.4GHz band), regarding the IBM internal specification.

#### IBM ThinkPad T40 Series

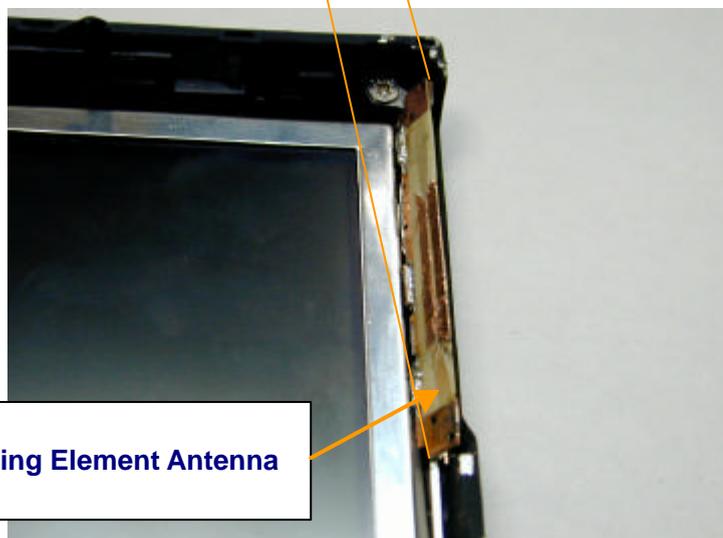
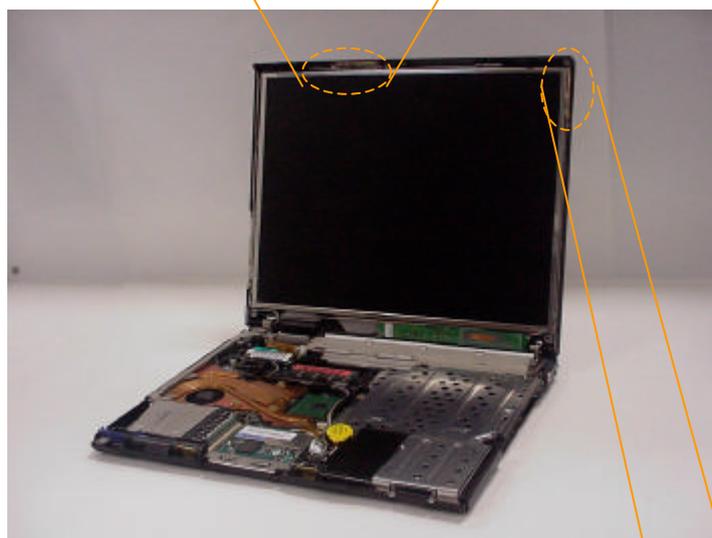
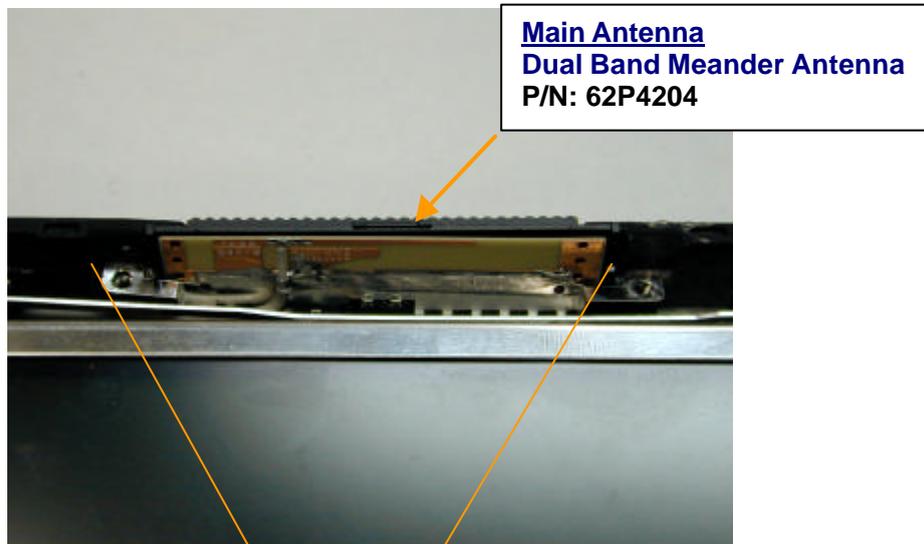
		Designator	Manufacture	Antenna type Note 1)	Cable type and length	Gain (dBi) Note 2)
LCD 14 inch Model	Main	62P4204	Foconn Electronics Inc. (R.O.C.)	Dual Band Meander Antenna	Coax 745 mm	0.99 dBi (peak)
	Auxiliary	62P4203		Dual-Band Coupled Floating Element Antenna	Coax 860 mm	-0.48 dBi (peak)
LCD 15 inch Model	Main	91P6841	Hitachi Cable Ltd. (Japan)	Dual Band Meander Antenna	coax 755mm	1.24 dBi (peak)
	Auxiliary	91P6840			coax 580mm	0.38 dBi (peak)

#### IBM ThinkPad R50 Series

		Designator	Manufacture	Antenna type Note 1)	Cable type and length	Gain (dBi) Note 2)
LCD 14 inch Model	Main	91P6810	Hitachi Cable Ltd. (Japan)	Dual Band Meander Antenna	Coax 750 mm	1.52 dBi (peak)
	Auxiliary	91P6811			Coax 635 mm	1.84 dBi (peak)
LCD 15 inch Model	Main	91P6812	Hitachi Cable Ltd. (Japan)	Dual Band Meander Antenna	coax 775mm	1.18 dBi (peak)
	Auxiliary	91P6813			coax 670mm	1.71 dBi (peak)

### 3.2 Antenna Locations

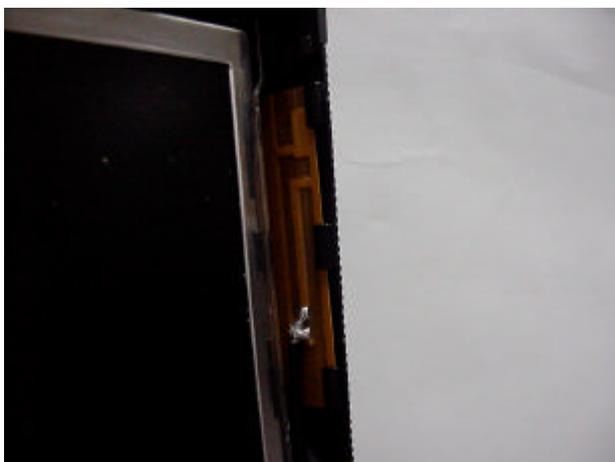
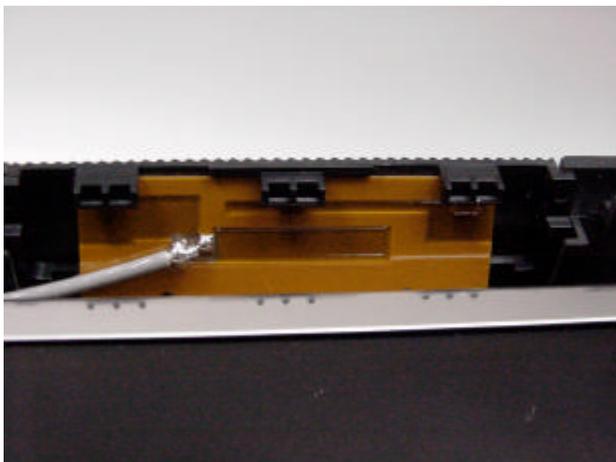
#### 3.2.1 IBM ThinkPad T40 Series, LCD 14 inch model



### 3.2.2 IBM ThinkPad T40 Series, LCD 15 inch model

**Main antenna**  
**Dual Band Meander antenna**  
**P/N: 91P6841**

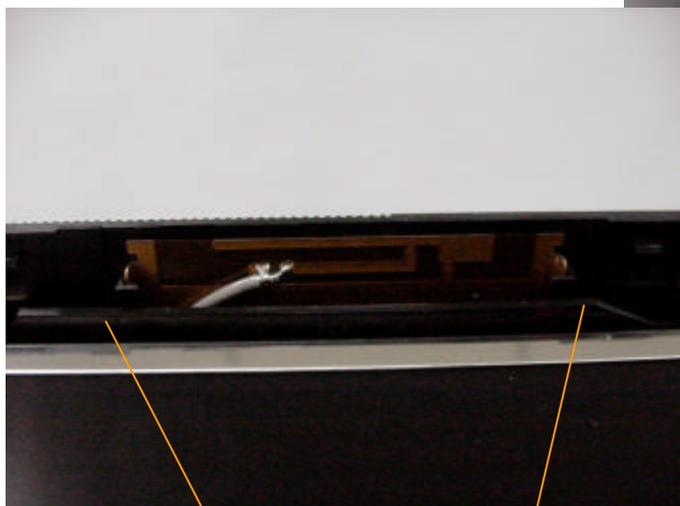
**Auxiliary antenna**  
**Dual Band Meander antenna**  
**P/N: 91P6840**



### 3.2.3 IBM ThinkPad R50 Series

**Main antenna**  
**Dual Band Meander Antenna**  
P/N: 91P6810 (14 inch)  
P/N: 91P6812 (15 inch)

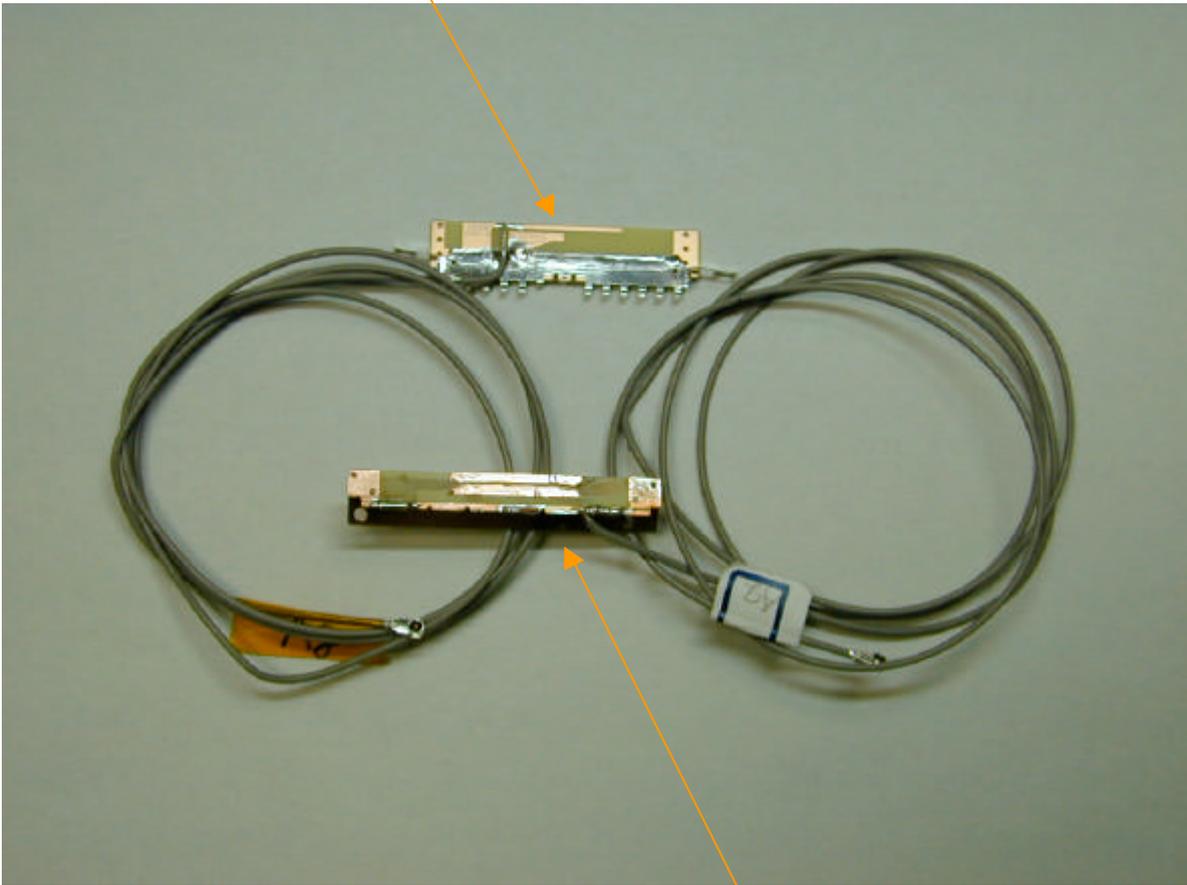
**Auxiliary antenna**  
**Dual Band Meander Antenna**  
P/N: 91P6811 (14 inch)  
P/N: 91P6813 (15 inch)



### 3.3 Exterior Photos of Antennas

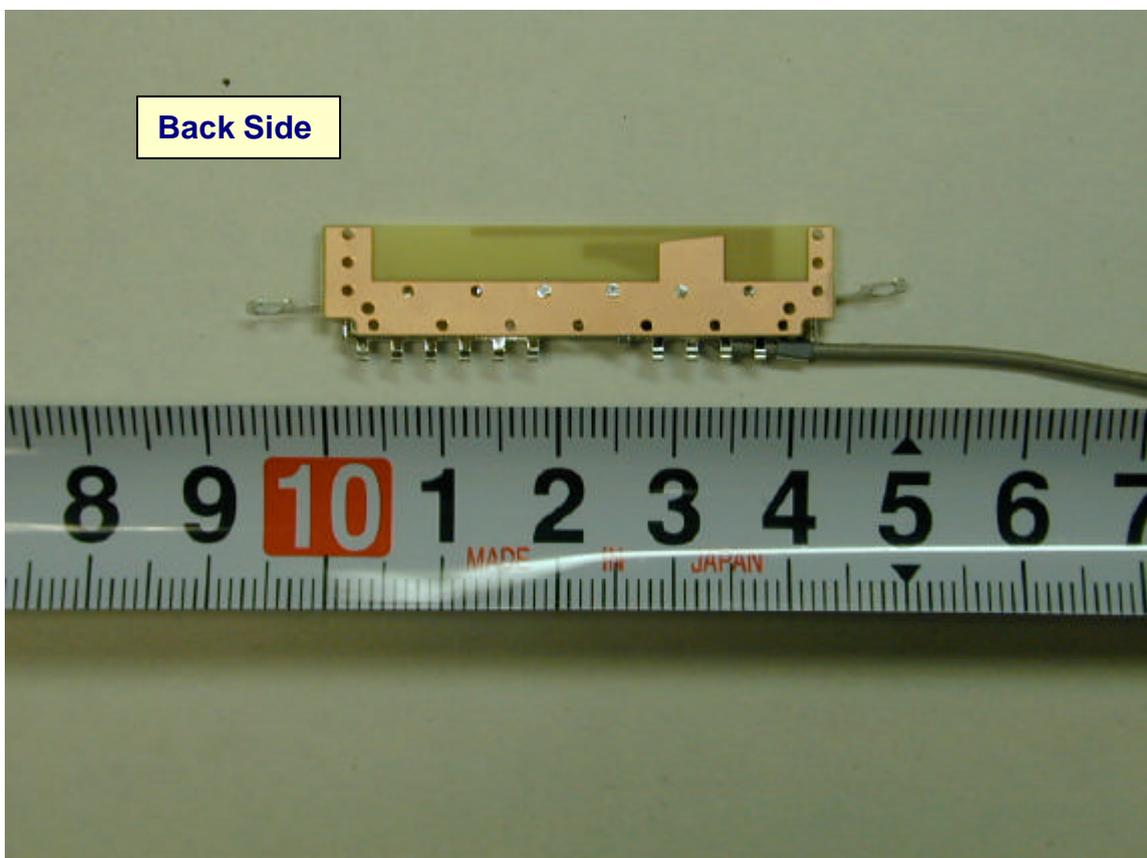
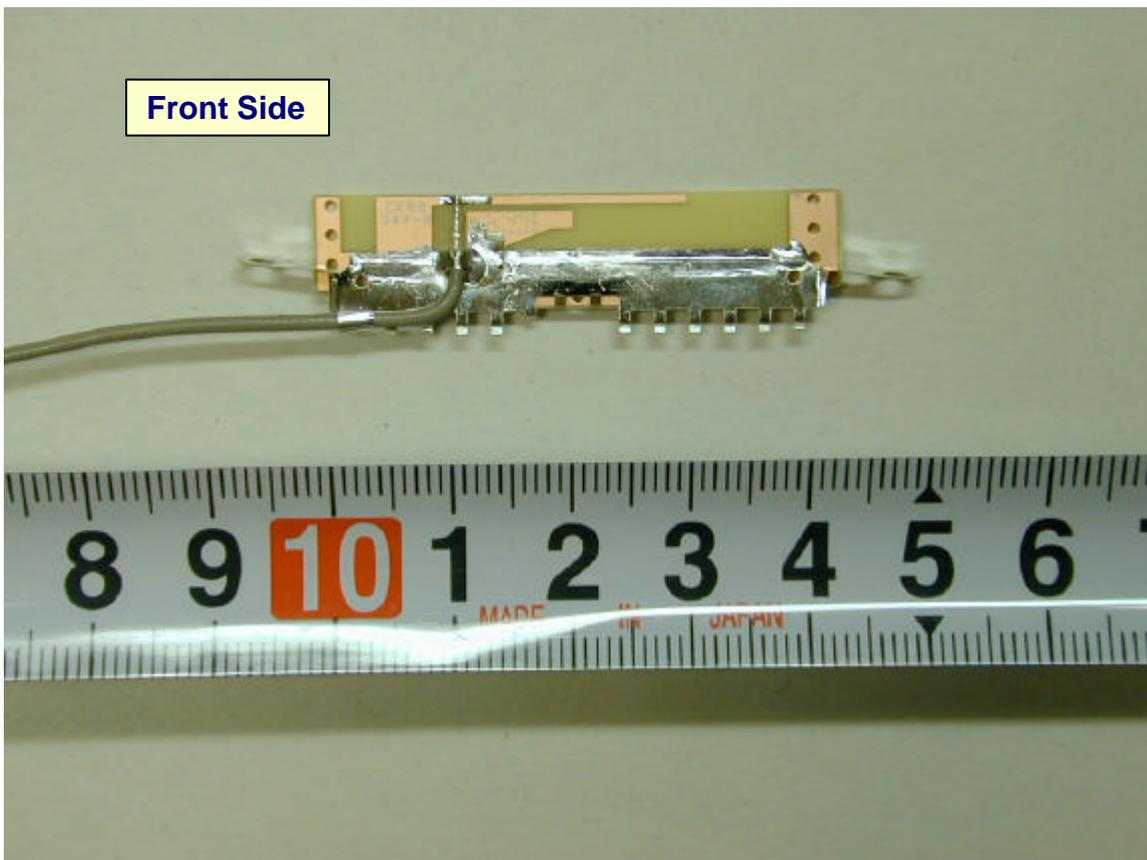
#### 3.3.1 IBM ThinkPad T40 Series, LCD 14 inch model

**Main Antenna**  
Manufacturer: Foxconn Electronics Inc.  
Parts Number: 62P4204  
Dual Band Meander antenna  
Cable: coax 740mm

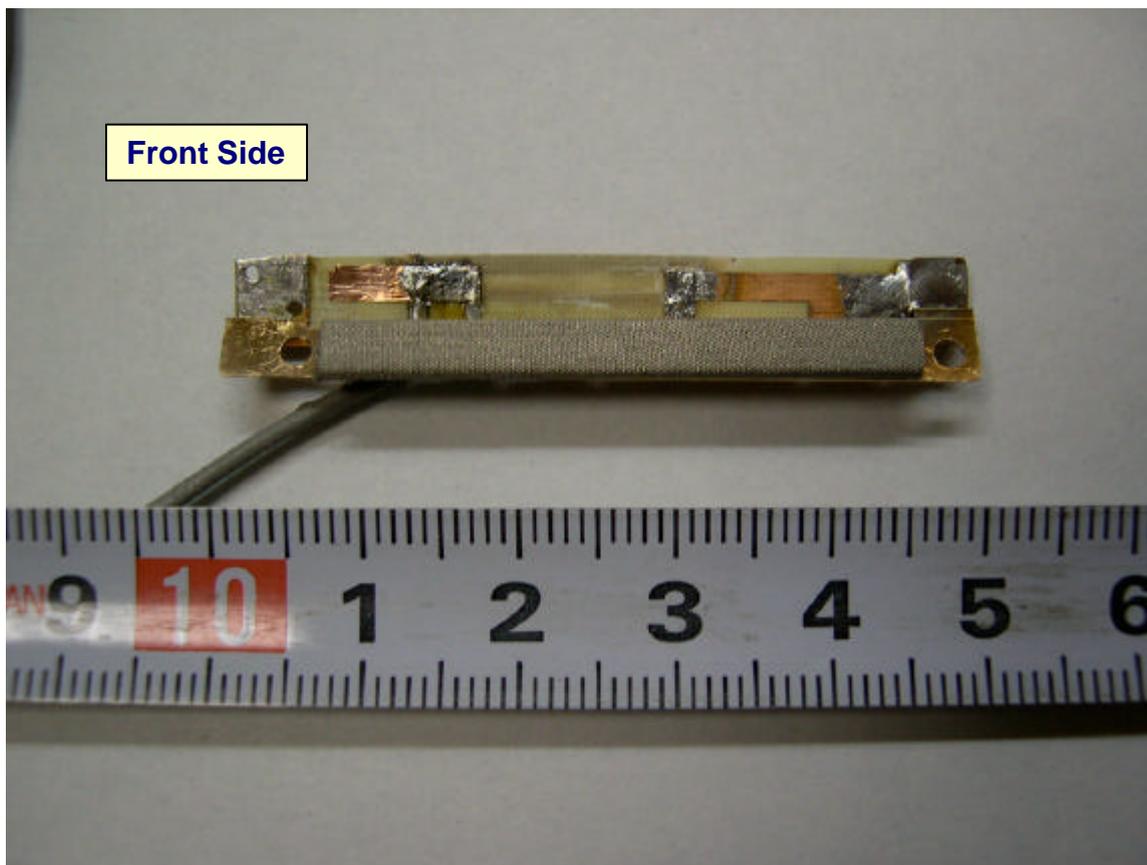


**Auxiliary Antenna**  
Manufacturer: Foxconn Electronics Inc.  
Parts Number: 62P4203  
Dual-Band Coupled Floating Element Antenna  
Cable : coax 845mm

Main Antennas for ThinkPad T40 Series, LCD 14 inch model



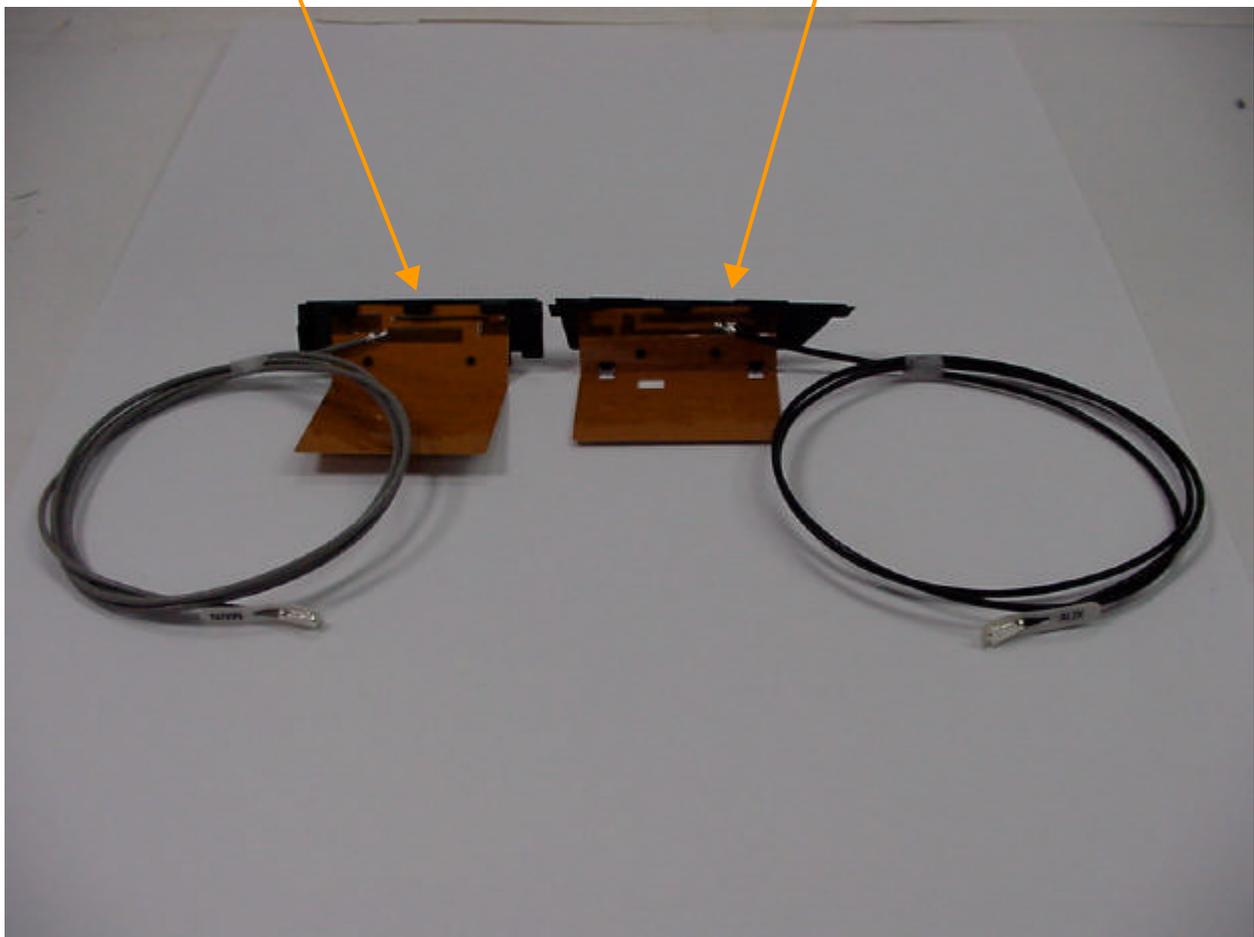
Auxiliary Antennas for ThinkPad T40 Series, LCD 14 inch model



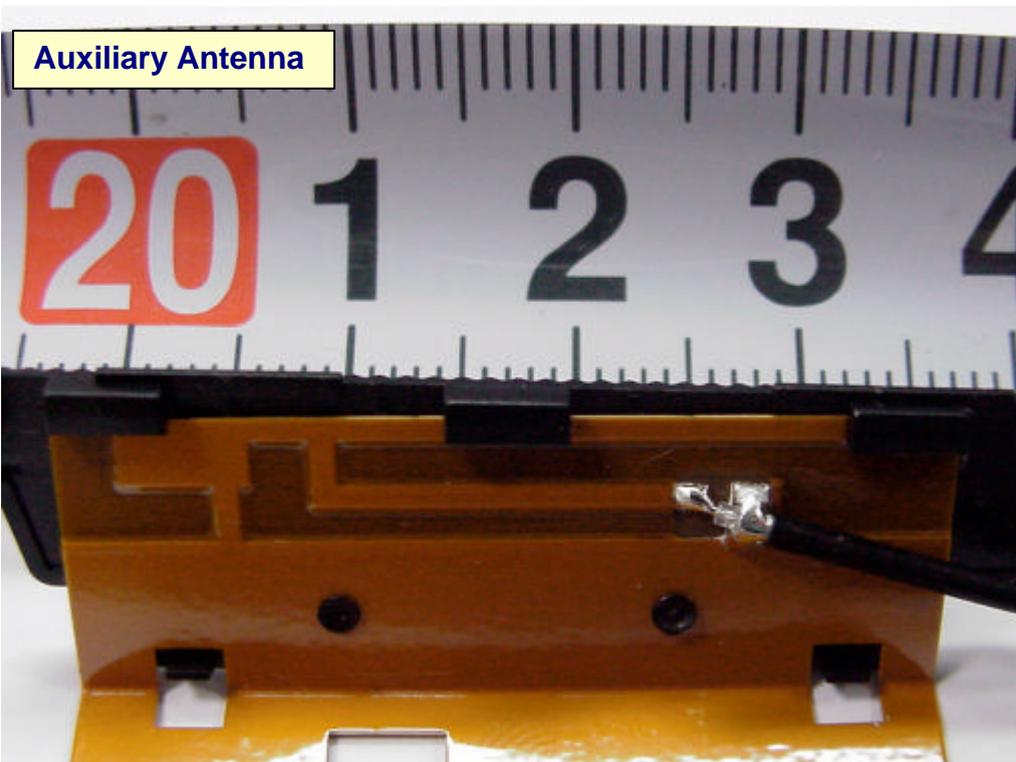
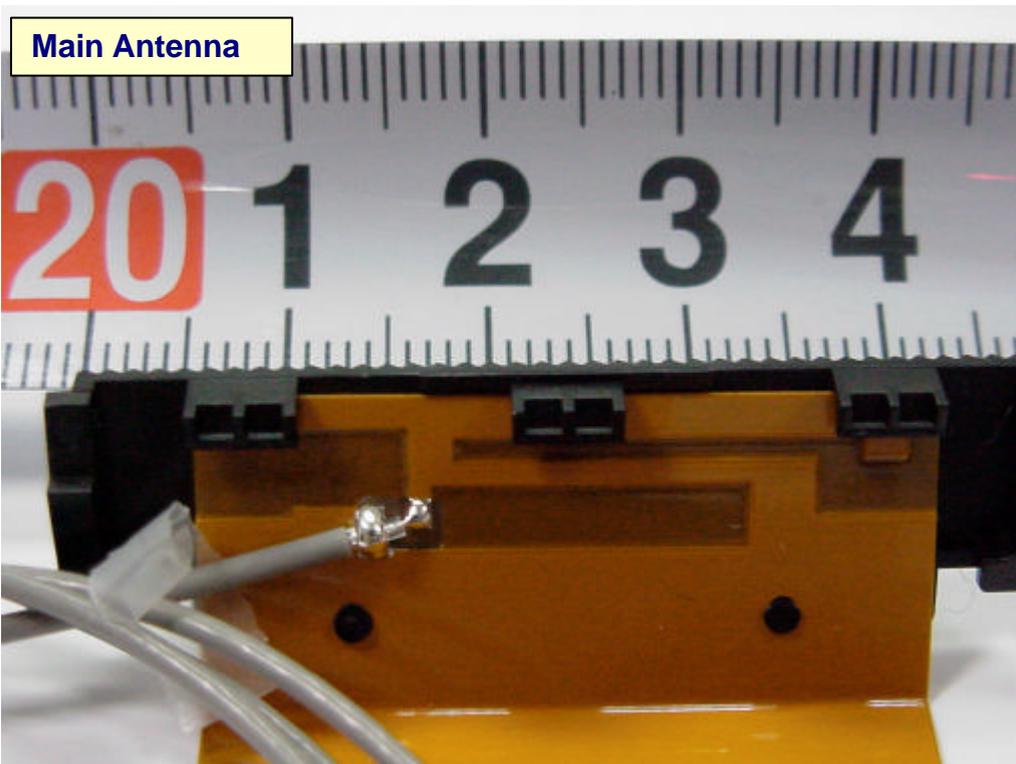
### 3.3.2 IBM ThinkPad T40 Series, LCD 15 inch model

**Main antenna**  
**Manufacturer: Hitachi Cable Ltd.**  
**Parts Number: 91P6841**  
**Dual Band Meander antenna**  
**Cable : coax 755 mm**

**Auxiliary antenna**  
**Manufacturer: Hitachi Cable Ltd.**  
**Parts Number: 91P6840**  
**Dual Band Meander antenna**  
**Cable : coax 580 mm**



Antennas for ThinkPad T40 Series, LCD 15 inch model



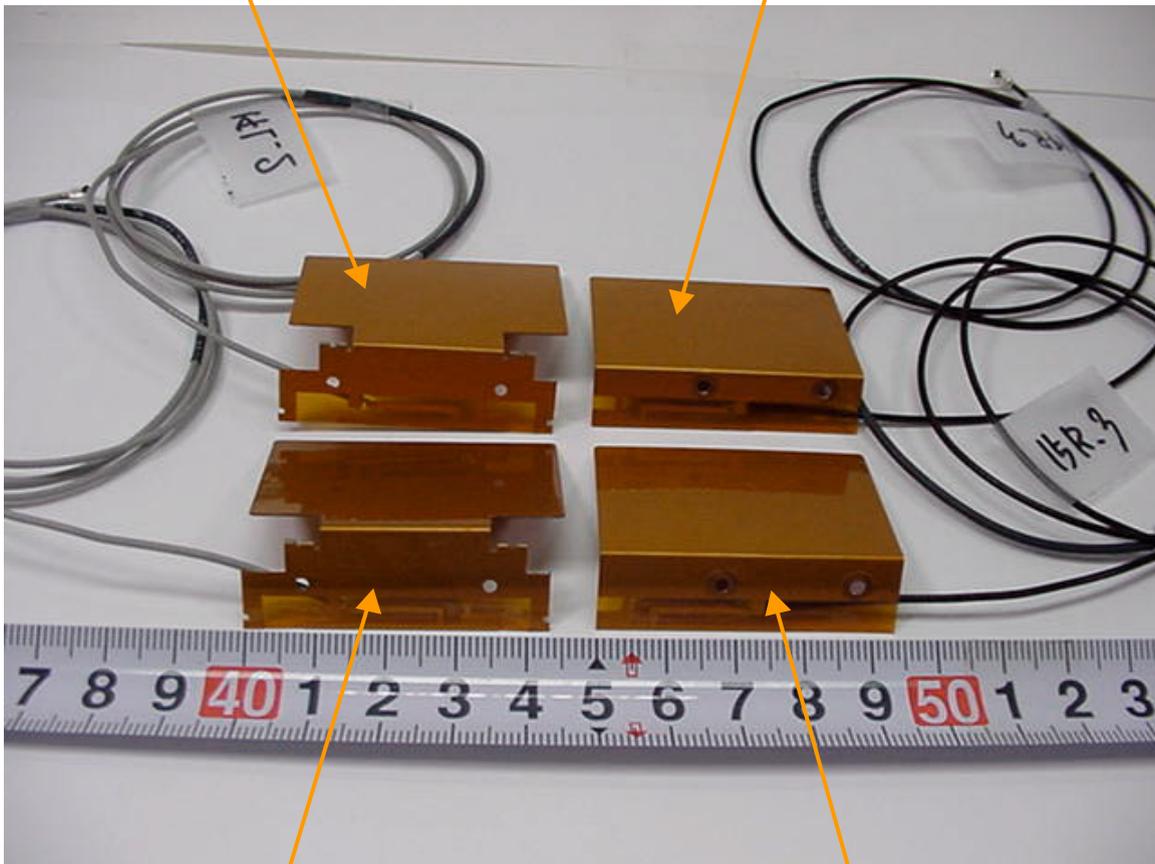
### 3.3.3 IBM ThinkPad R50 Series

**Main antenna for 14 inch model**

**Manufacturer: Hitachi Cable Ltd.  
Parts Number: 91P6810  
Dual Band Meander antenna  
Cable : coax 750 mm**

**Auxiliary antenna for LCD 14 inch model**

**Manufacturer: Hitachi Cable Ltd.  
Parts Number: 91P6811  
Dual Band Meander antenna  
Cable : coax 635 mm**



**Main antenna for LCD 15 inch model**

**Manufacturer: Hitachi Cable Ltd.  
Parts Number: 91P6812  
Dual Band Meander antenna  
Cable : coax 775 mm**

**Auxiliary antenna for LCD 15 inch model**

**Manufacturer: Hitachi Cable Ltd.  
Parts Number: 91P6813  
Dual Band Meander antenna  
Cable : coax 670 mm**

**Antennas for ThinkPad R50 Series, LCD 14 inch model**

**Main Antenna**

**Manufacturer: Hitachi Cable Ltd.**

**Parts Number: 91P6810**

**Dual Band Meander antenna**

**Cable : coax 750 mm**



**Auxiliary Antenna**

**Manufacturer: Hitachi Cable Ltd.**

**Parts Number: 91P6811**

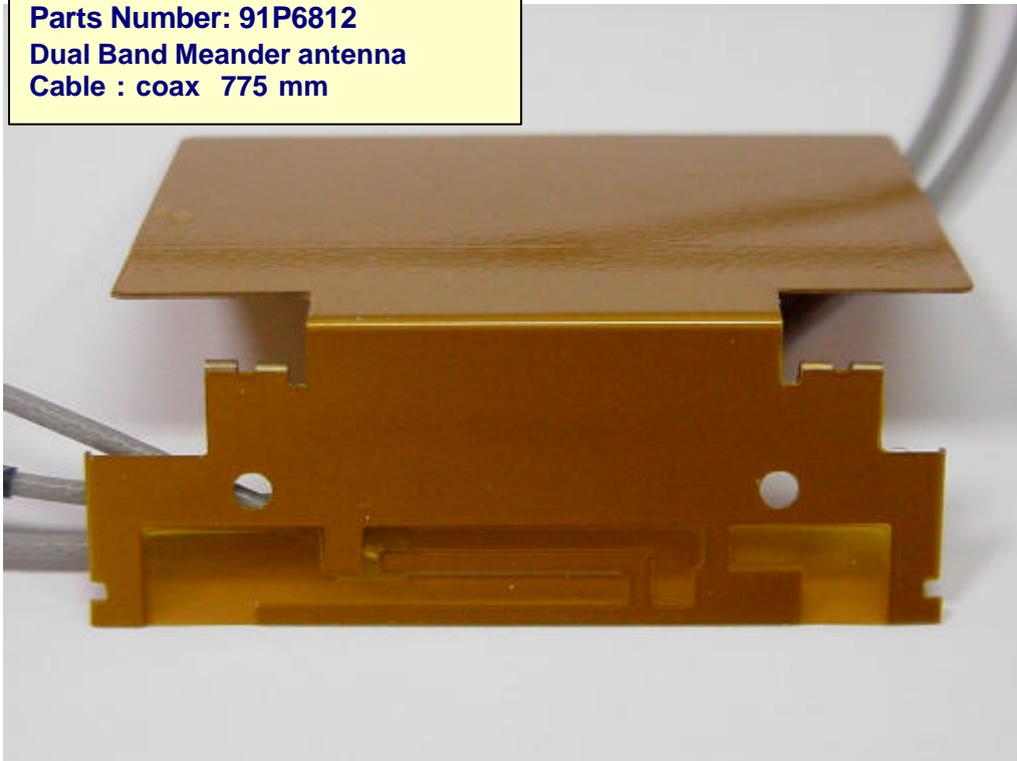
**Dual Band Meander antenna**

**Cable : coax 635 mm**



**Antennas for ThinkPad R50 Series, LCD 15 inch model**

**Main Antenna**  
Manufacturer: Hitachi Cable Ltd.  
Parts Number: 91P6812  
Dual Band Meander antenna  
Cable : coax 775 mm



**Auxiliary Antenna**  
Manufacturer: Hitachi Cable Ltd.  
Parts Number: 91P6813  
Dual Band Meander antenna  
Cable : coax 670 mm

