Host Unit Antenna Information
for
ThinkPad T40 Series
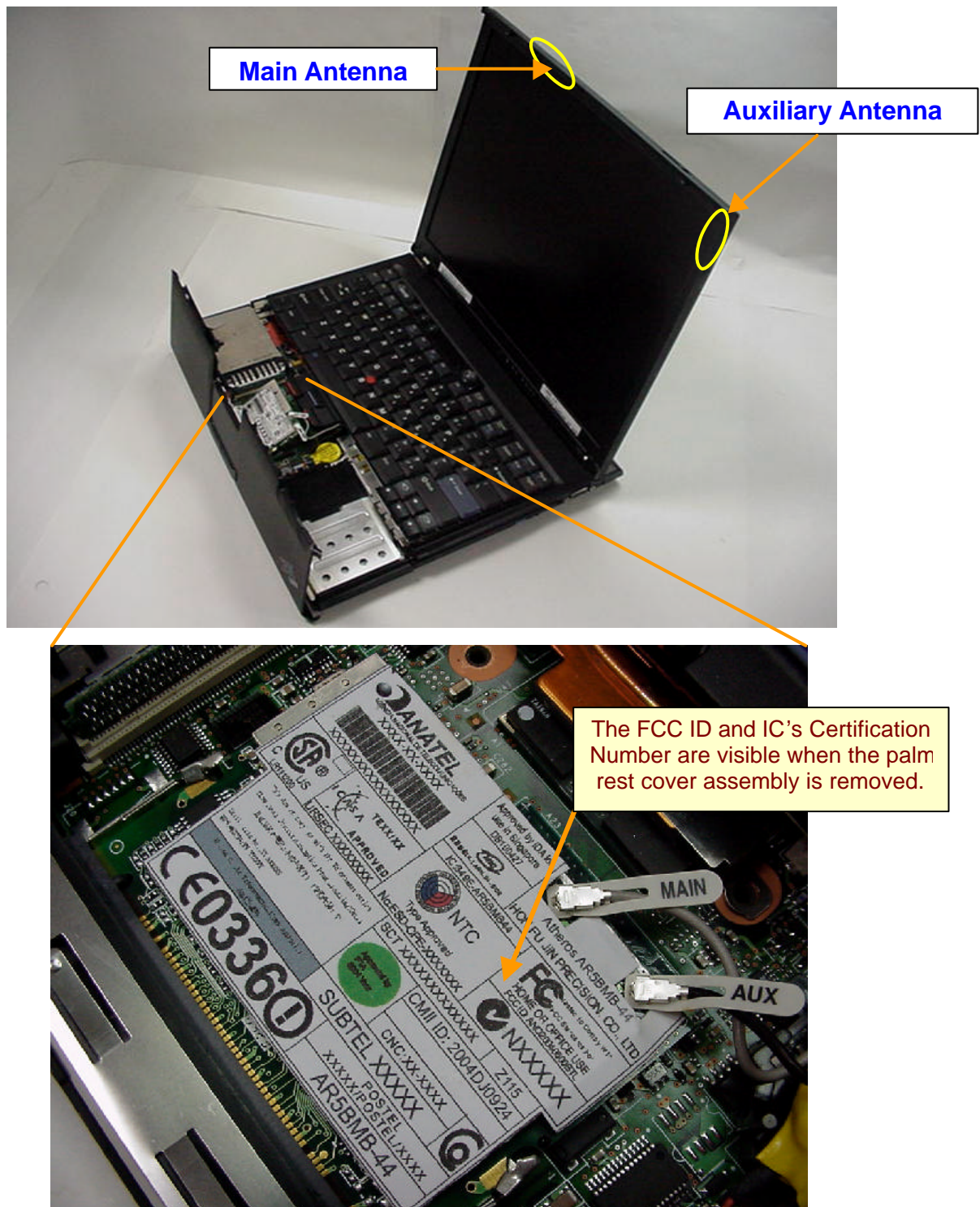## ThinkPad R50 Series

1.   Host PC Information

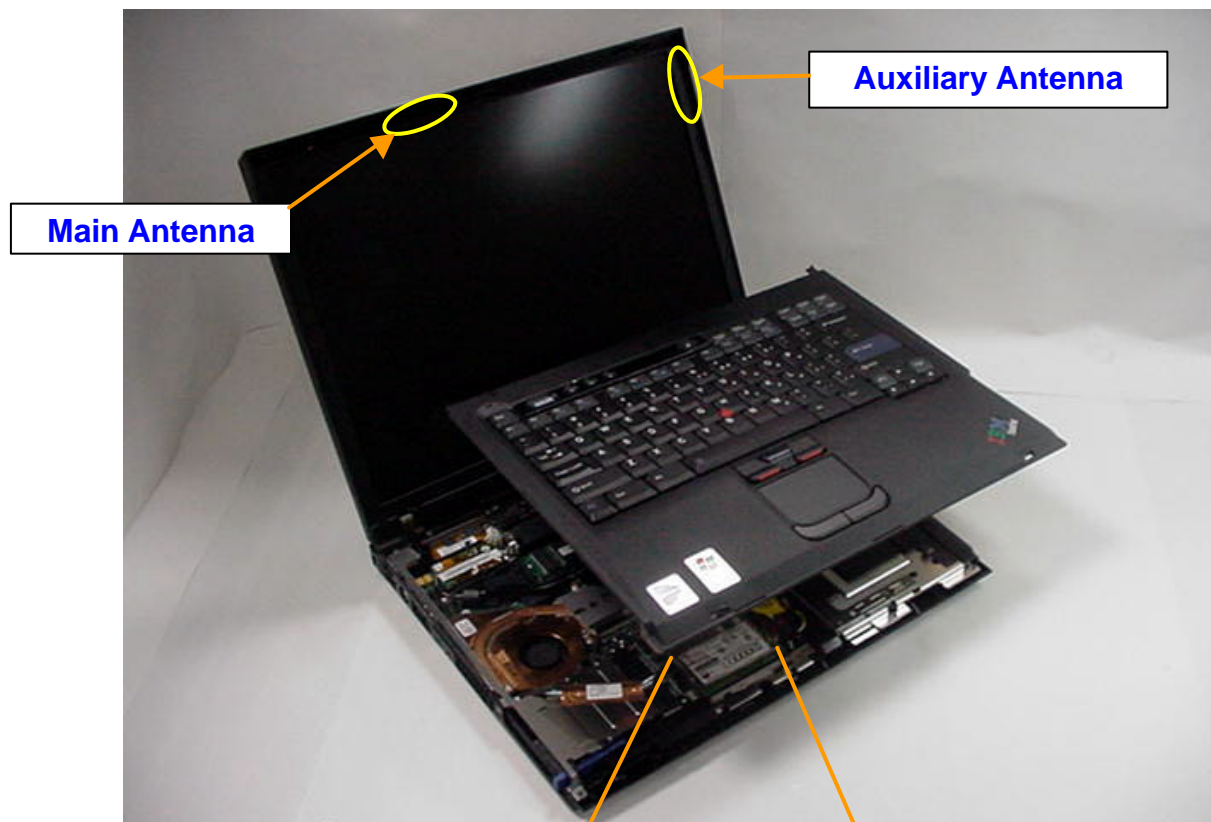**IBM ThinkPad T40 Series and R50 Series**

 The hosts PCs (IBM ThinkPad T40 Series and R50 Series) are designed with the same conceptual hardware configuration of standard 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.
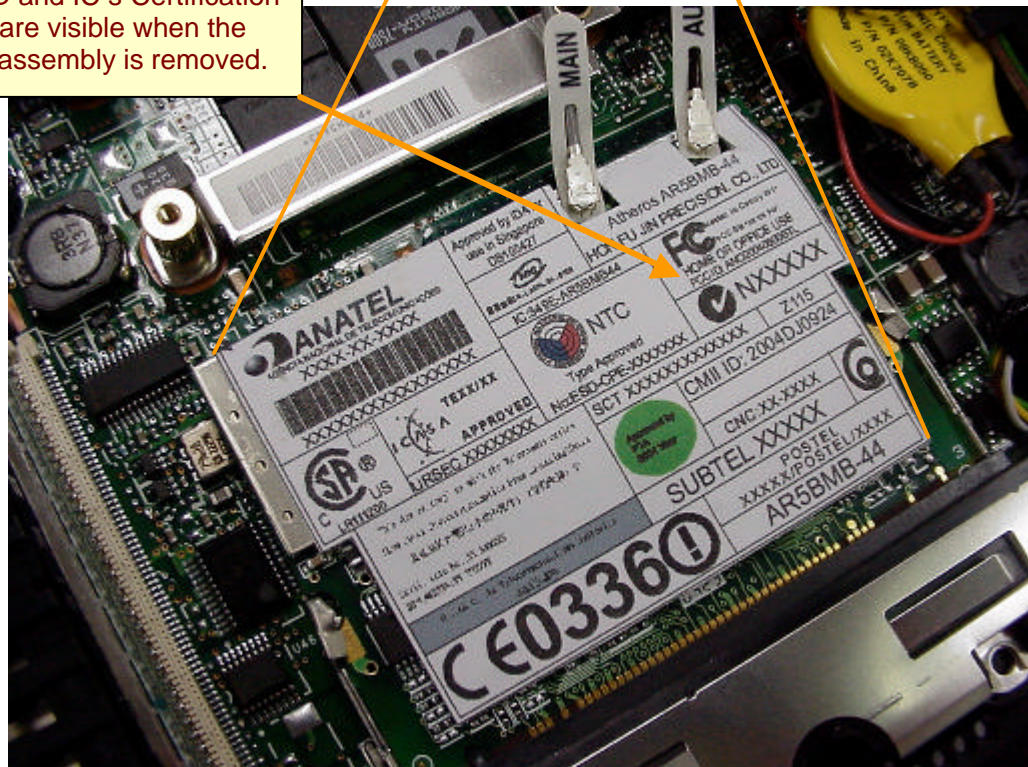
IBM ThinkPad **T40** Series, LCD 14 inch model

Main Antenna

Auxiliary Antenna

The FCC ID and IC's Certification Number are visible when the palm rest cover assembly is removed.

IBM ThinkPad **T40** Series, LCD 15 inch model, and
IBM ThinkPad **R50** Series, LCD 15 inch model

Auxiliary Antenna

Main Antenna

The FCC ID and IC's Certification Number are visible when the keyboard assembly is removed.

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 and May/04/2004).

▲ TX FCC ID for an installed CDC transmitter card located under customer removable Keyboard
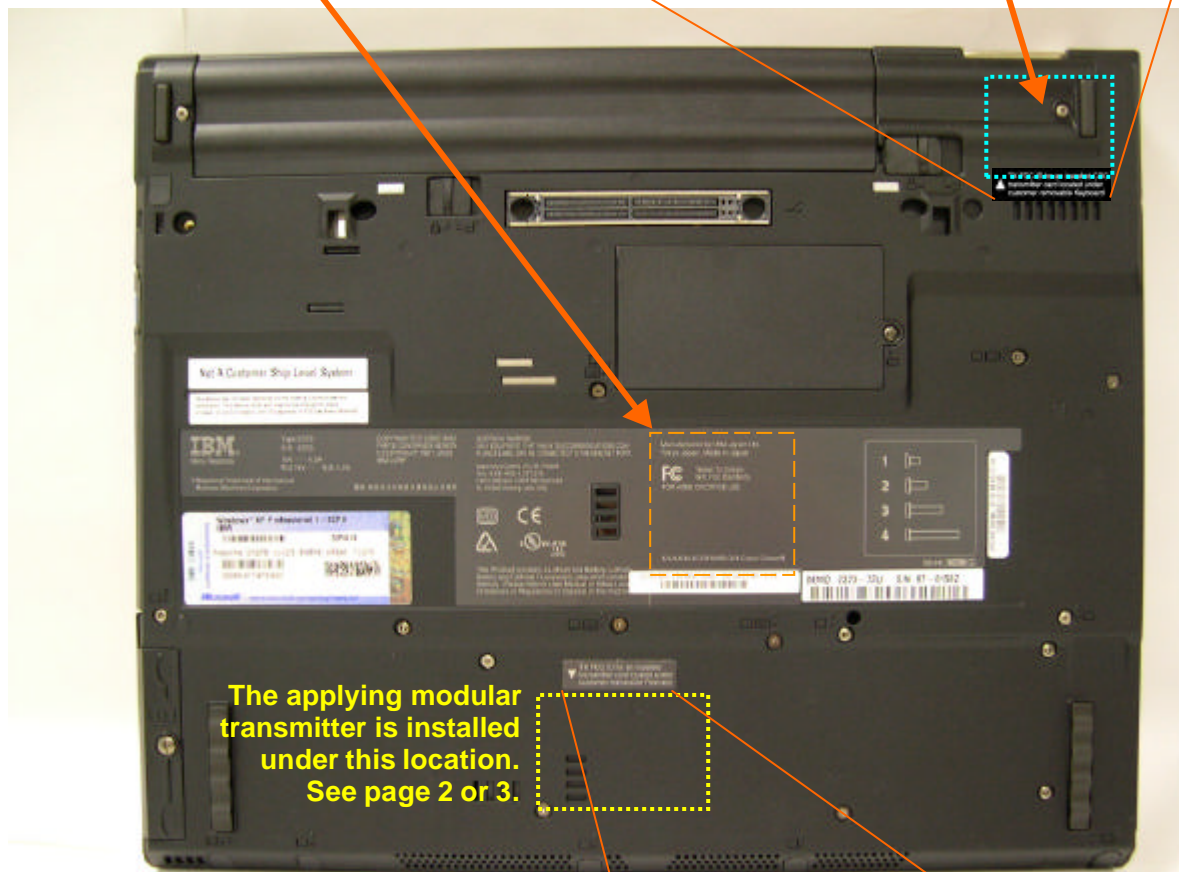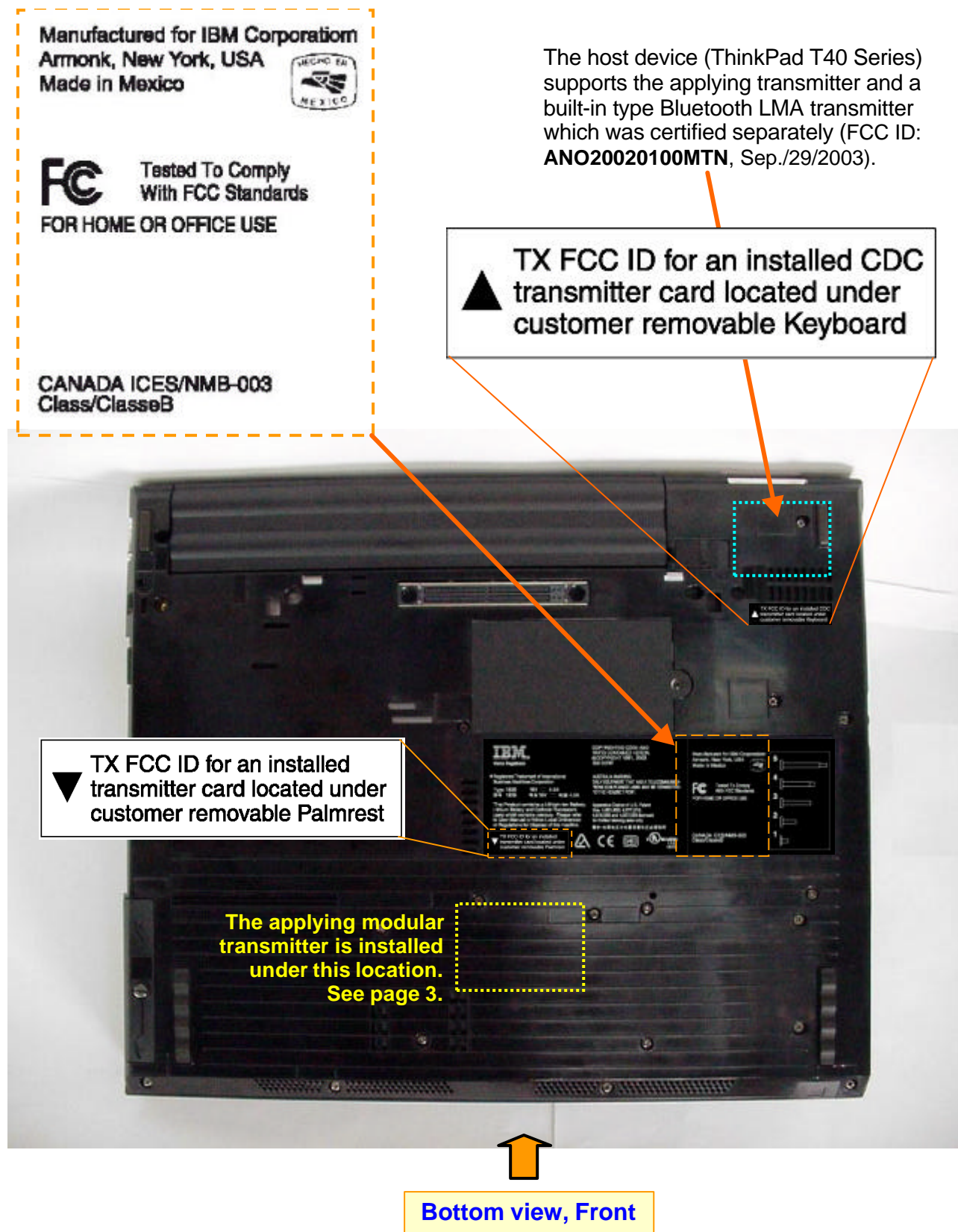
The applying modular transmitter is installed under this location. See page 2 or 3.

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/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**, 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): 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.
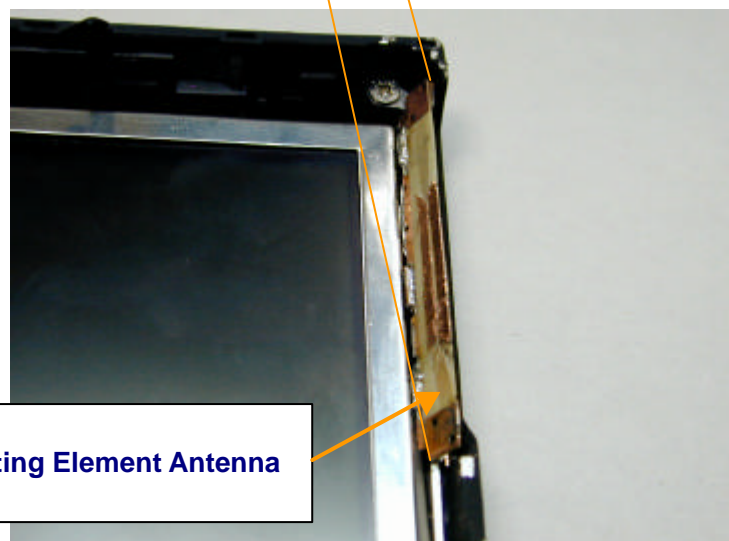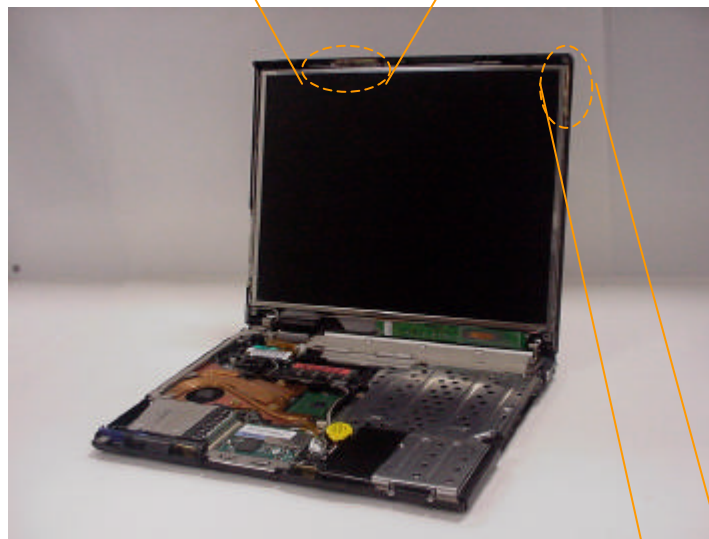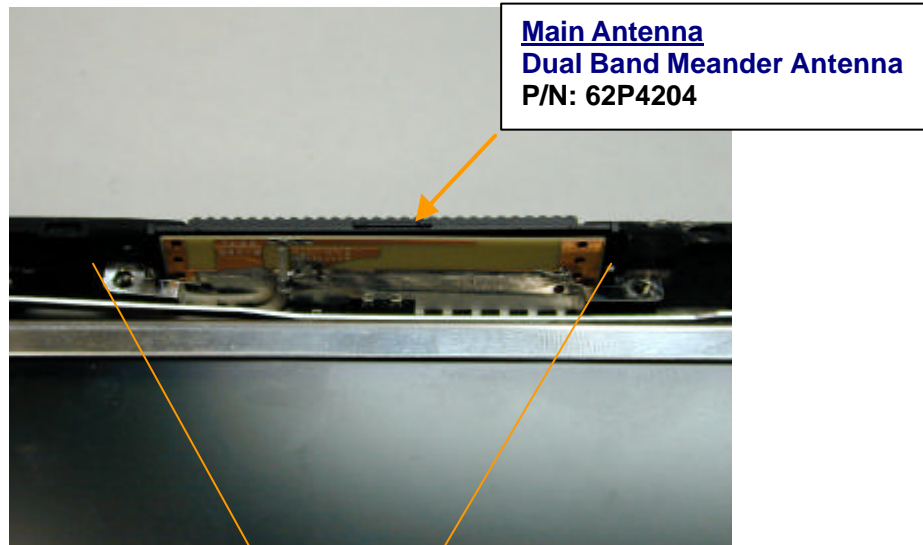
IBM ThinkPad T40 Series

		Designator	Manufacture	Antenna type	Cable type and length	Peak Gain Note 1)	
LCD **14** inch Model	Main	62P4204	Foconn Electronics Inc. (R.O.C.)	Dual Band Meander Antenna	Coax 745 mm	5.2GHz band	0.83 dBi
	Auxiliary	62P4203		Dual-Band Coupled Floating Element Antenna	Coax 860 mm		0.36 dBi
LCD **15** inch Model	Main	91P6841	Hitachi Cable Ltd. (Japan)	Dual Band Meander Antenna	coax 755mm	5.2GHz band	2.00 dBi
	Auxiliary	91P6840			coax 580mm		0.82 dBi

IBM ThinkPad R50 Series

|		Designator	Manufacture	Antenna type	Cable type and length	Peak Gain Note 1)	
LCD **14** inch Model	Main	91P6810	Hitachi Cable Ltd. (Japan)	Dual Band Meander Antenna	Coax 750 mm	5.2GHz band	2.66 dBi
	Auxiliary	91P6811			Coax 635 mm		1.37 dBi
LCD **15** inch Model	Main	91P6812	Hitachi Cable Ltd. (Japan)	Dual Band Meander Antenna	coax 775mm	5.2GHz band	1.68 dBi
	Auxiliary	91P6813			coax 670mm		2.84 dBi

3.2   Antenna Locations

3.2.1   IBM ThinkPad T40 Series, LCD 14 inch model

Main Antenna
Dual Band Meander Antenna
P/N: 62P4204

Auxiliary Antenna
Dual-Band Coupled Floating Element Antenna
P/N: 62P4203

3.2.2 IBM ThinkPad T40 Series, LCD 15 inch model
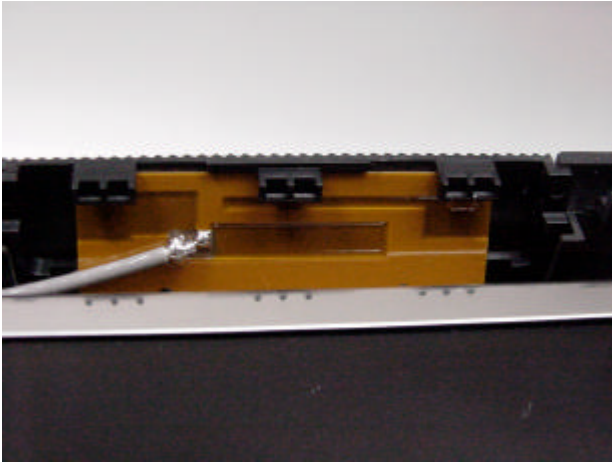
| **Main antenna**
Dual Band Meander antenna
P/N: 91P6841 | **Auxiliary antenna**
Dual Band Meander antenna
P/N: 91P6840 |

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)
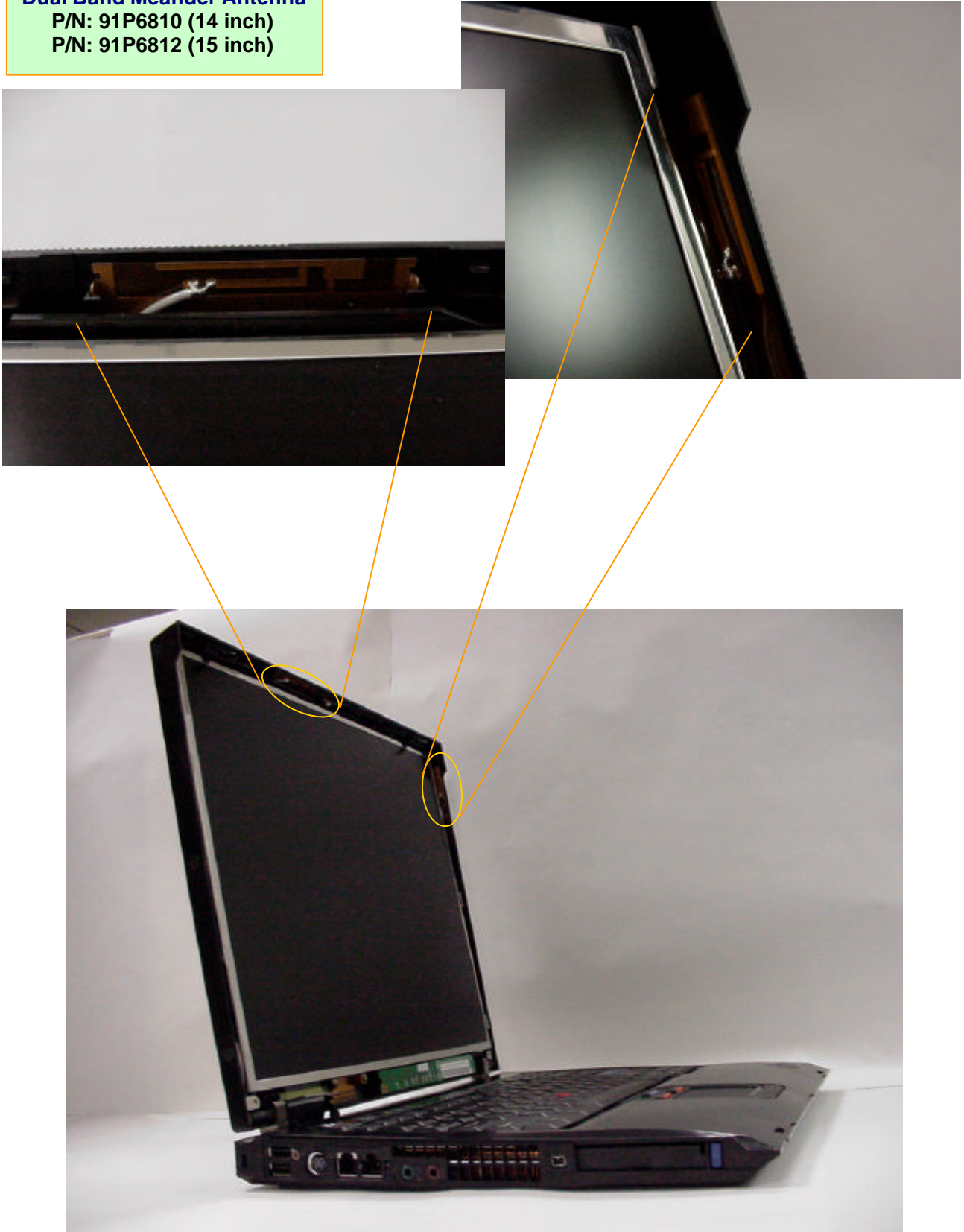
3.3   Exterior Photos of Antennas

3.3.1   IBM ThinkPad T40 Series, LCD 14 inch model

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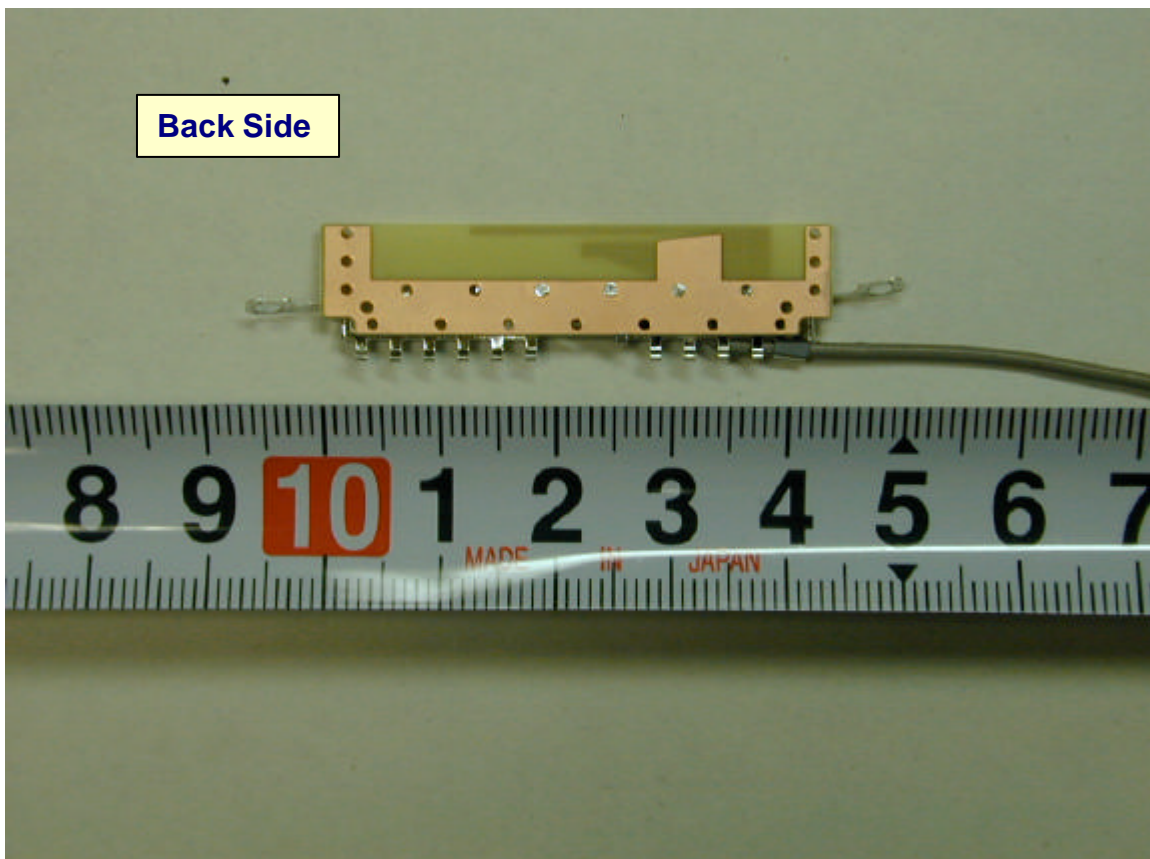**Dual Band Meander antenna**
Cable: coax 740mm
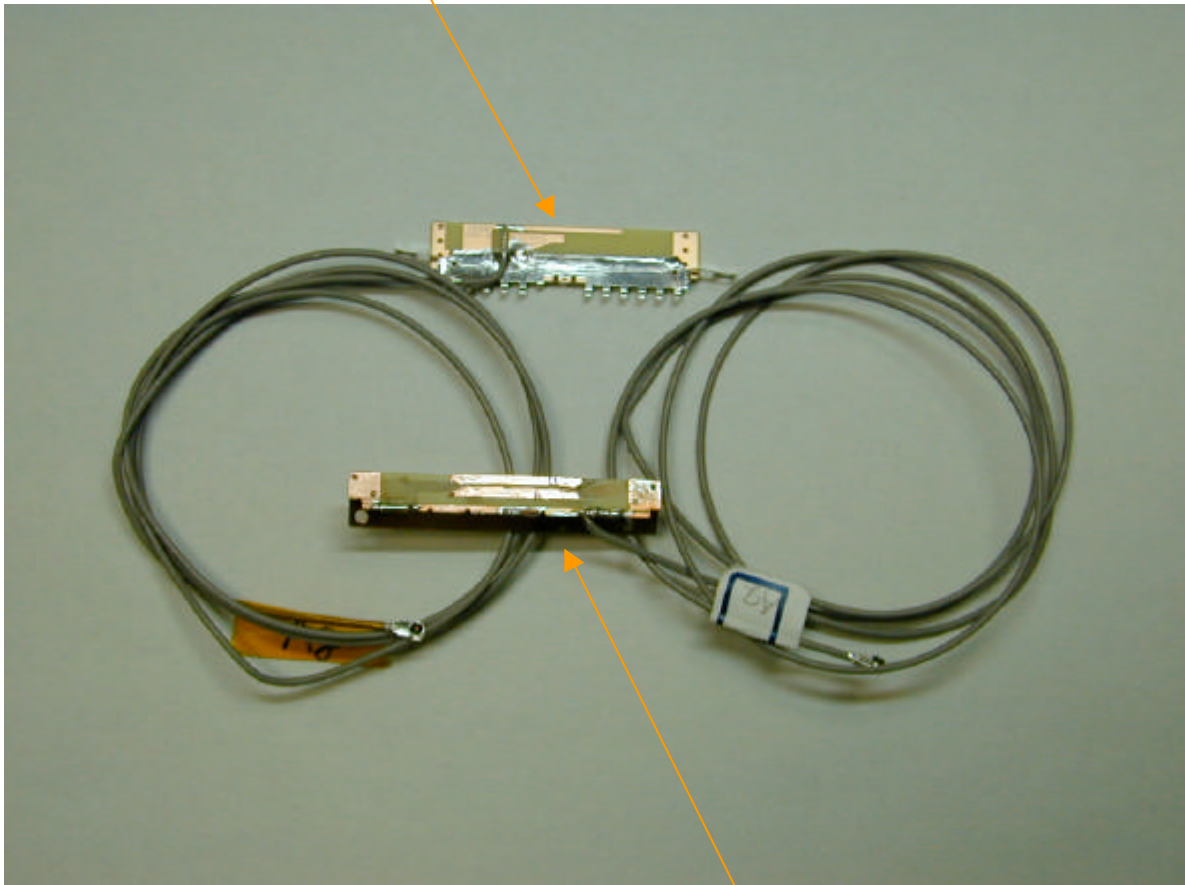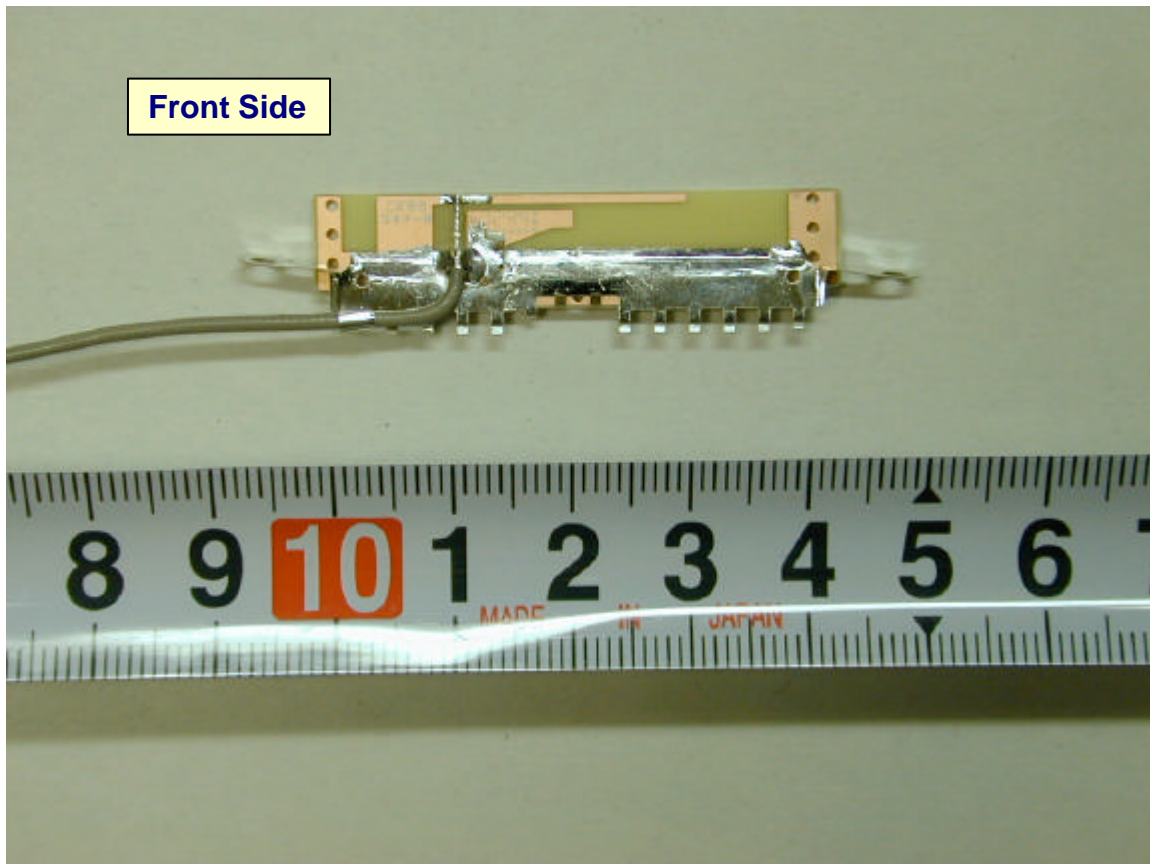

Auxiliary Antenna
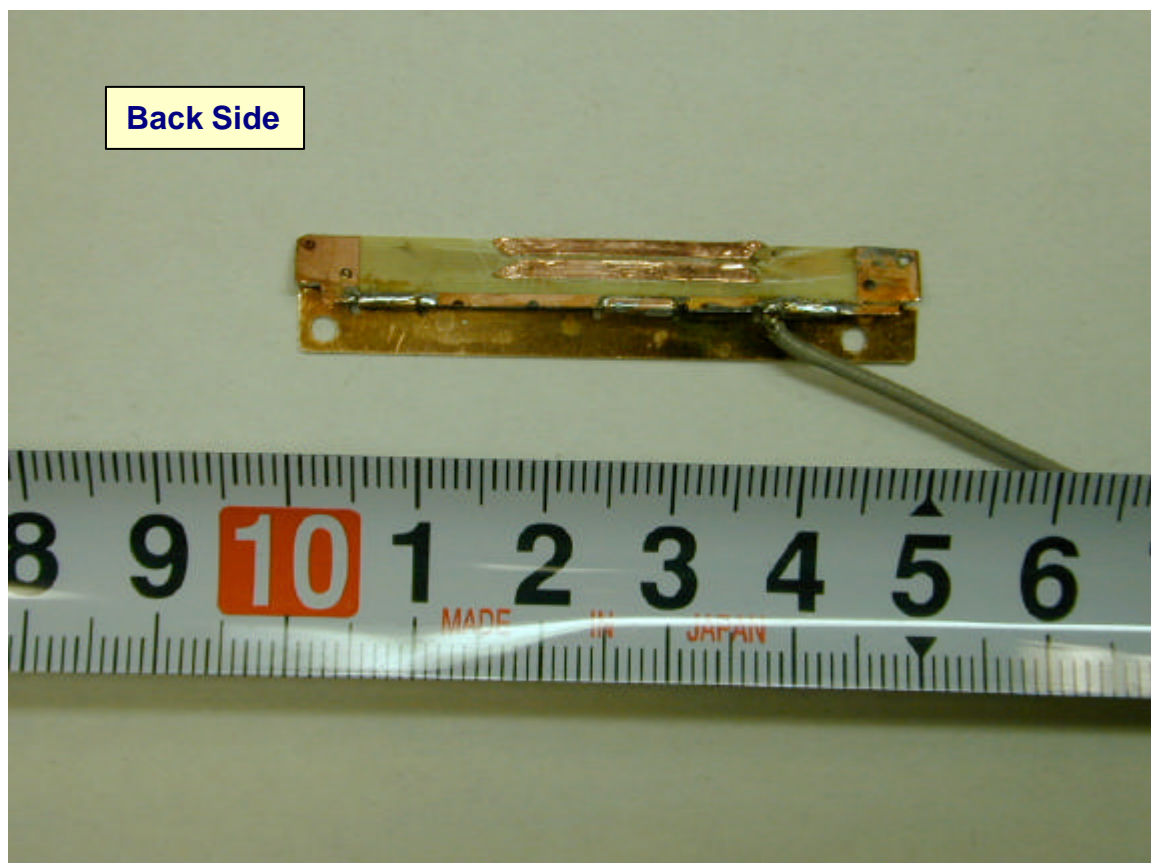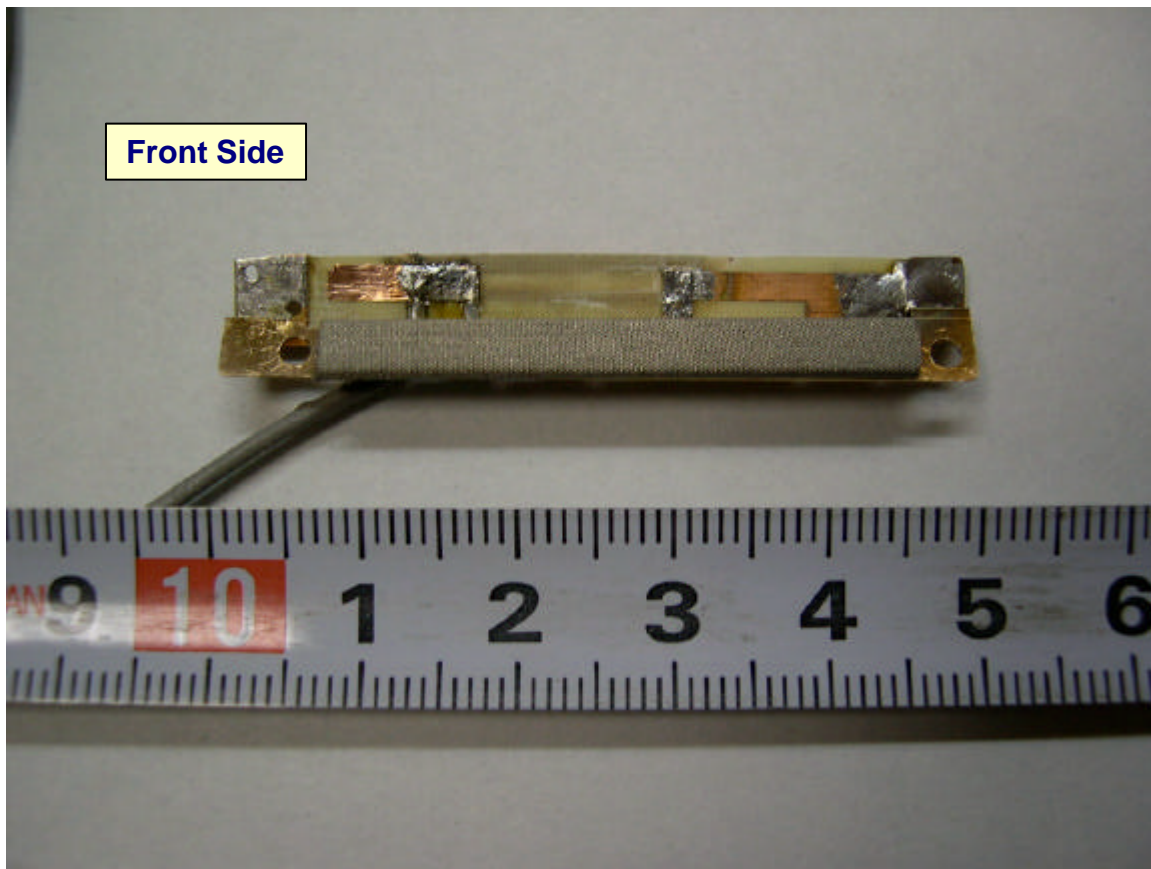**Manufacturer: Foxconn Electronics Inc.**
Parts Number: 62P4203
Dual-Band Coupled Floating Element Antenna
Cable : coax 845mm

Main Antennas for ThinkPad T40 Series, LCD 14 inch model

Front Side

Back Side

Auxiliary Antennas for ThinkPad T40 Series, LCD 14 inch model
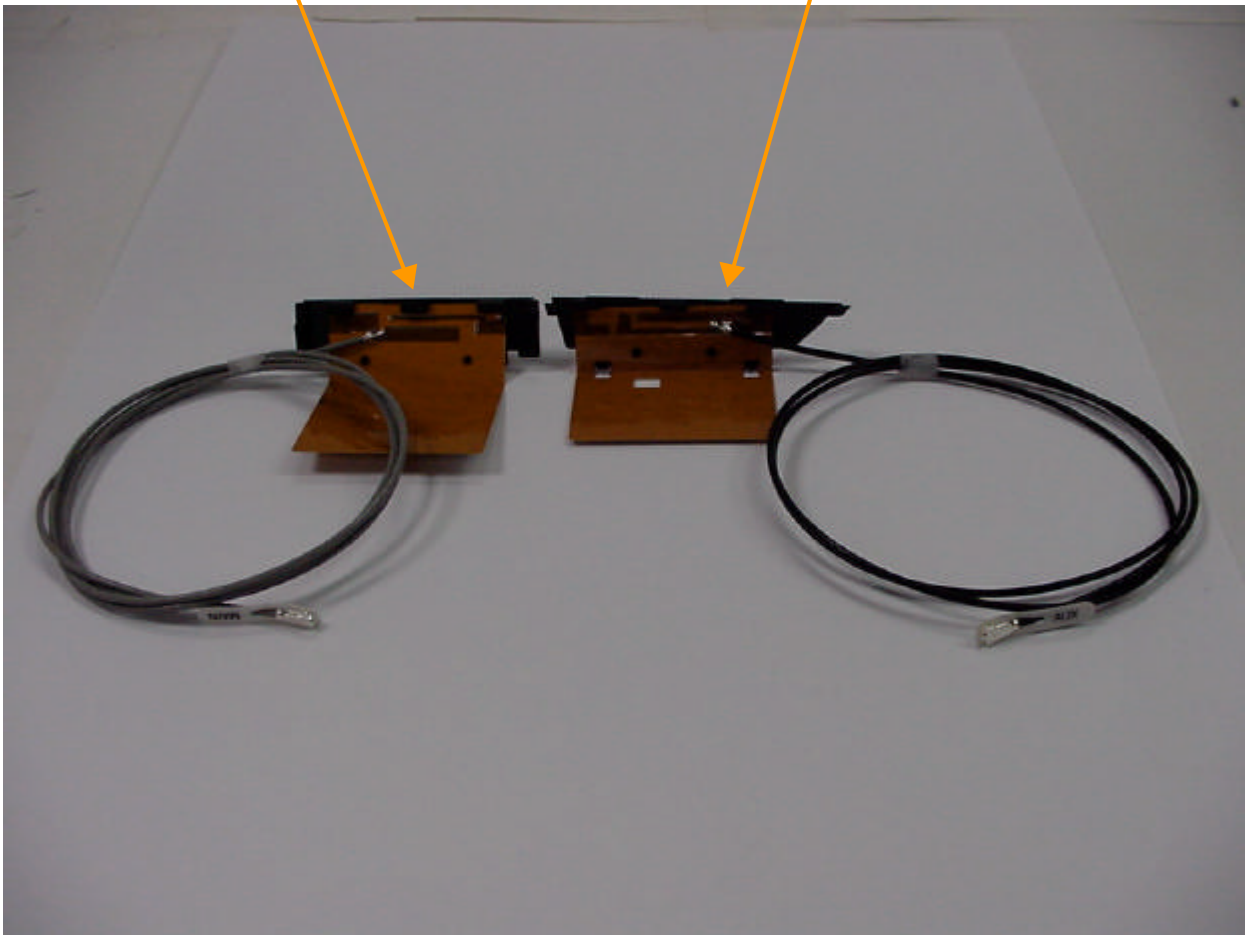

Front Side

Back Side

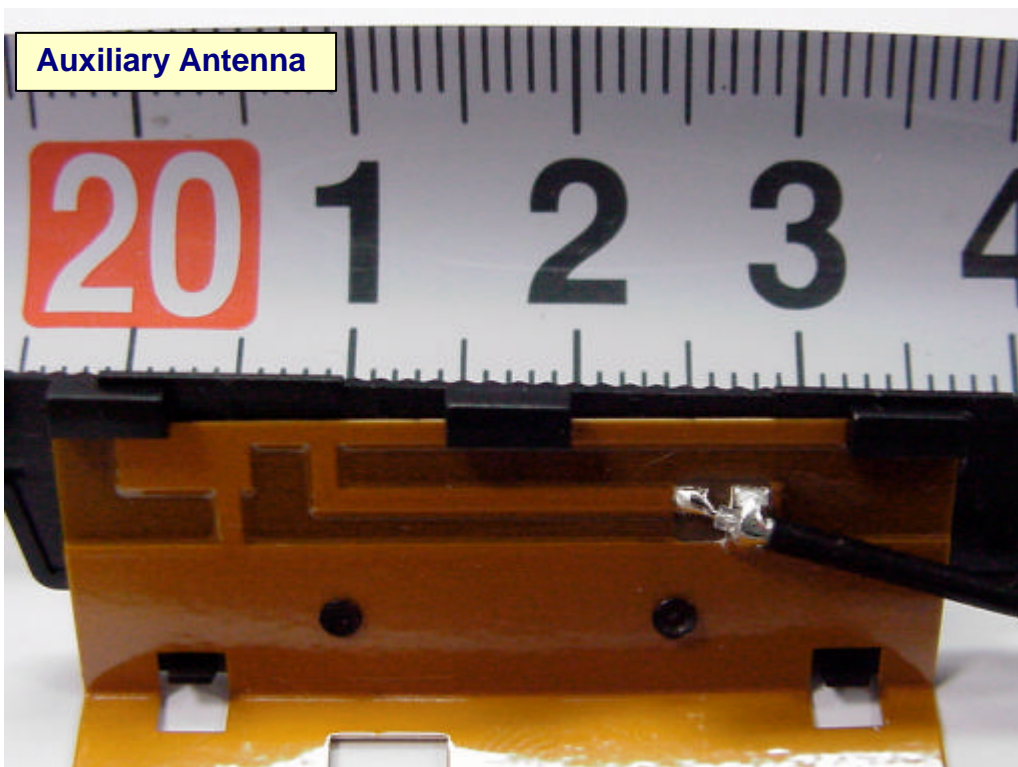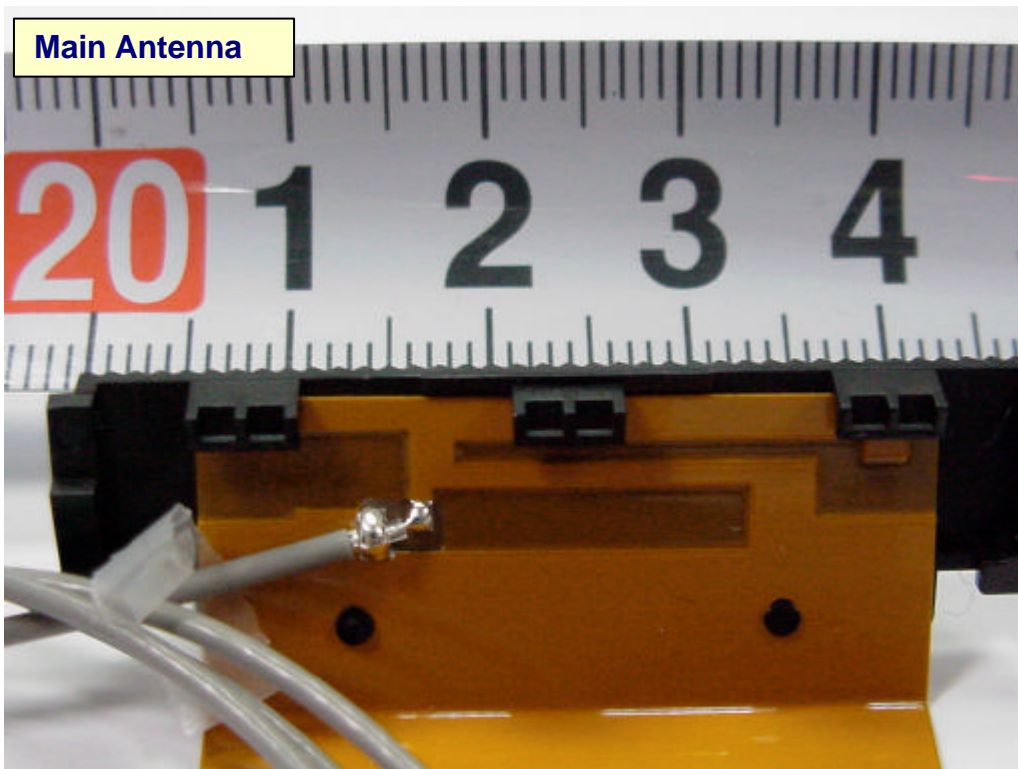## 3.3.2 IBM ThinkPad T40 Series, LCD 15 inch model

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

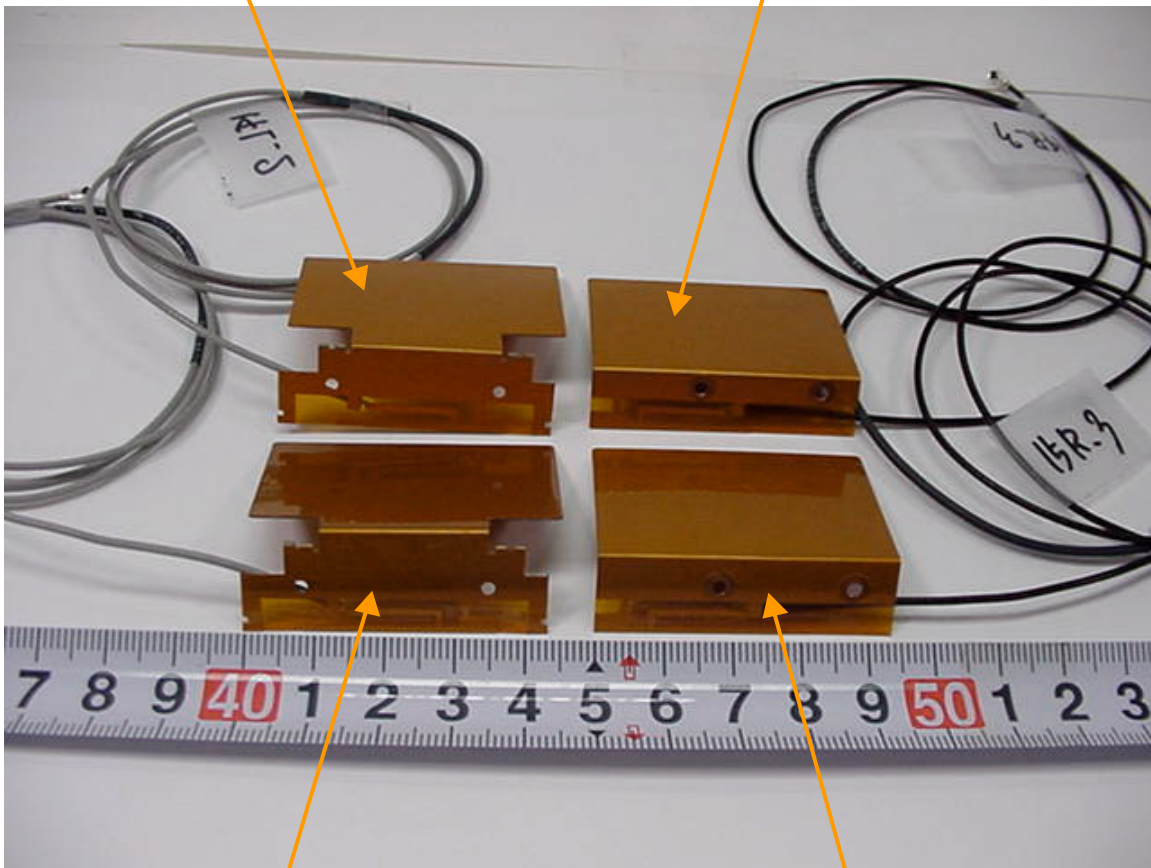**Main Antenna**

Auxiliary Antenna

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

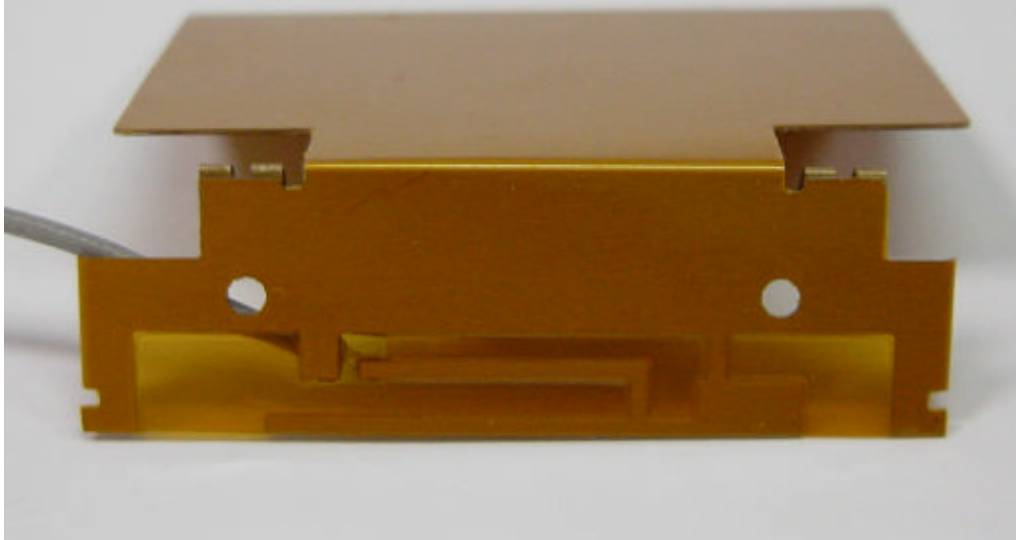# Antennas for ThinkPad R50 Series, LCD 14 inch model

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
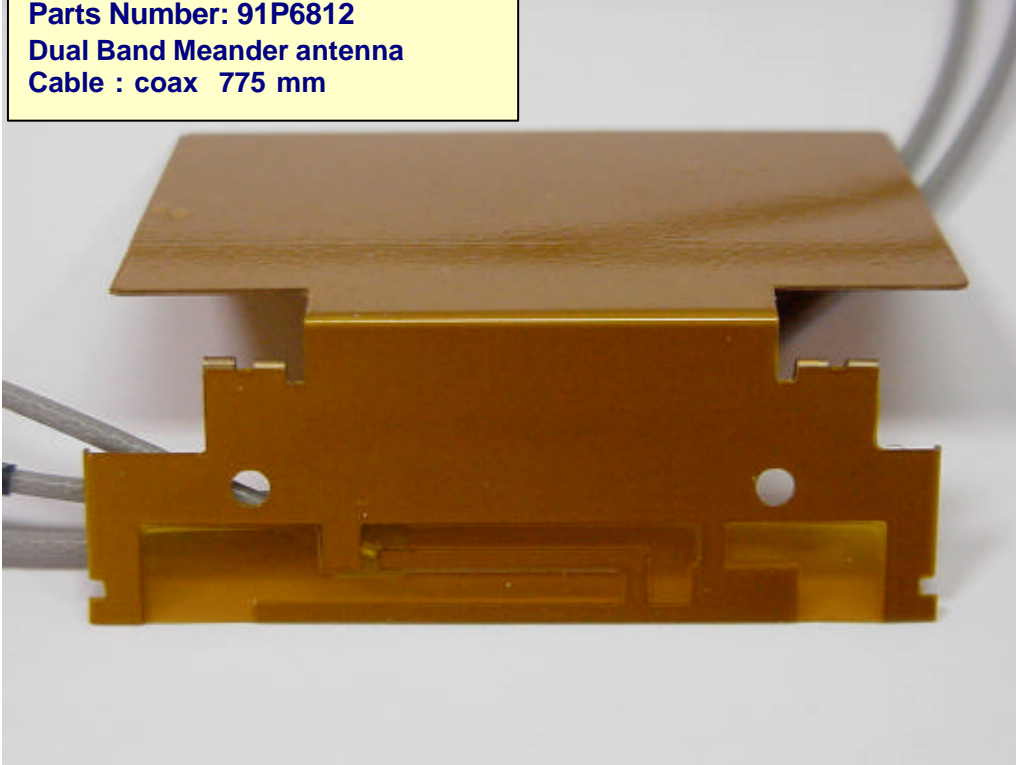
Antennas for ThinkPad R50 Series, LCD 15 inch model

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