

Regulatory WLAN Antenna Information

2.45/5GHz IdeaPad U330 Multiple Band Antennas

with cable & connector For IEEE 802.11/a/g/n

(English Language Required for Intel Regulatory Review / Approval)

Platform	
Platform Owner	Lenovo
Brand Name	Lenovo
Model Name	IdeaPad U330
ODM	Wistron corporation
Target Launch Date	(2008/ 06/ 23)
Antenna	
Brand Name	ShangHai Amphenol Airwave
Part Number	■ Main Antenna: 25.90632.001
	■ Aux Antenna: 25.90633.001
	■ Mimo Antenna 25.90634.001
Module	
With WLAN Module	☐ WM3B2200BG
(Check Box)	☐ WM3B2915ABG
	☐ WM3945ABG
	☐ 4965AGN
	☐ 4965AG_
	☐ 533ANX Family
	☐ 512ANX Family
	☐ 533AN Family
	☐ 512AN Family

Antenna Sample / Antenna Data

Requirements for worldwide regulatory approval

Section	Description of Required OEM / ODM Antenna Information	US / IC	EU	Japan	Taiwan	S.Korea
1A	Part Number for Antenna only	Required	Required	Required	Required	Required
1B	Antenna Manufacturer Name	Required	Required	Required	Required	Required
1C	Description of Antenna Type	Required	N/A	N/A	N/A	N/A
1D	Part number of Antenna Assembly / cable impedance, length & diameter.	Required	Desired	Desired	Desired	Desired
1E	Tx1, Tx2 & Tx3 antenna (Peak Gain W/ cable loss) *	Required	Required	Required	Required	Required
	1E OR 1F, 1G, 1H					
1F	Tx1, Tx2 & Tx3 antenna (Peak Gain only) *	Required	Required	Required	Required	Required
1G	VSWR of cable including connector	Required	Required	Required	Required	Required
1H	Tx1, Tx2 & Tx3 antenna (Cable loss W/ connector) *	Required	Required	Required	Required	Required
2	Dimensioned Photographs <u>and</u> Drawings of Tx1, Tx2, and Tx3 (or Rx3) antennas	Required	Required	Required	Required	Required
3	Radiation patterns of antennas loaded in the host platform.	Required	Desired	Required	N/A	Required
4	Platform model name / number - correlated to antenna manufacturer and antenna part number	Required	Required	Desired	Required	Desired
5	Photograph(s) or Drawings showing location of antennas in platform. (S. Korea requires <u>photographs of antennas for approval submission</u>). <u>Taiwan requires pictures of each antenna type shown in the system.</u>	Required	Required	Desired	<u>Required (Photos)</u>	<u>Required (Photos)</u>
6	Mech. drawings / photos with dimensions of antenna locations and distance from end-user (For evaluation of SAR testing requirement).	Required	N/A	N/A	N/A	N/A
7	Photograph(s) or Drawings showing the location of all antennas (WLAN, other) and distance between those transmitting antennas. Information will be used to evaluate whether co-location testing is required.	Required	N/A	N/A	N/A	N/A
8	Local representative contact information for LMA/ PARS process.	Required	N/A	N/A	N/A	N/A

NOTE:

(*) if 3rd antenna is Rx only (e.g. receive only for 4965AGN) then peak gain and cable loss not required

Antenna Information

Section 1. Antenna Assembly Specifications

Antenna Assembly Summary:

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	1E *Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
(P/N:LX1110-11-000-R) Main Antenna	Amphenol	IFA	50 ohm Coaxial. length: 618mm diameter: 1.37mm Color: Grey Connector: U.FL	2400-2500MHz 0.86dBi (peak)	2400-2500MHz 2.59dBi (peak)	2400-2500MHz 1.80max	2400-2500MHz 1.73dBi (peak)
				2496-2690MHz 1.21dBi (peak)	2496-2690MHz 3.06dBi (peak)	2496-2690MHz 1.80 max	2496-2690MHz 1.85dBi (peak)
				5150-5350MHz 2.37dBi (peak)	5150-5350MHz 4.71 dBi (peak)	5150-5350MHz 1.48max	5150-5350MHz 2.34dBi (peak)
				5470-5725MHz 1.93dBi (peak)	5470-5725MHz 4.73 dBi (peak)	5470-5725MHz 1.45max	5470-5725MHz 2.80dBi (peak)
				5725-5850MHz 1.87dBi (peak)	5725-5850MHz 4.60dBi (peak)	5725-5850MHz 1.40max	5725-5850MHz 2.73dBi (peak)
(P/N:LX1108-11-000-R) Aux Antenna	Amphenol	IFA	50 ohm Coaxial. length: 624mm diameter: 1.37mm Color: Black Connector: U.FL	2400-2500MHz 1.46dBi (peak)	2400-2500MHz 3.13 dBi (peak)	2400-2500MHz 1.44max	2400-2500MHz 1.67dBi (peak)
				2496-2690MHz 1.47dBi (peak)	2496-2690MHz 3.20 dBi (peak)	2496-2690MHz 1.56max	2496-2690MHz 1.73dBi (peak)
				5150-5350MHz 2.98dBi (peak)	5150-5350MHz 5.48 dBi (peak)	5150-5350MHz 1.67max	5150-5350MHz 2.50dBi (peak)
				5470-5725MHz 2.09dBi (peak)	5470-5725MHz 4.79 dBi (peak)	5470-5725MHz 1.48max	5470-5725MHz 2.70dBi (peak)
				5725-5850MHz 2.48dBi (peak)	5725-5850MHz 5.10dBi (peak)	5725-5850MHz 1.53max	5725-5850MHz 2.62dBi (peak)
(P/N:LX1109-11-000-R) MIMO Antenna	Amphenol	IFA	50 ohm Coaxial. length: 633mm diameter: 1.37mm Color: White Connector: U.FL	2400-2500MHz 0.26dBi (peak) *	2400-2500MHz 1.91dBi (peak) *	2400-2500MHz 1.60max *	2400-2500MHz 1.65dBi (peak) *
				5150-5350MHz 4.98dBi (peak) *	5150-5350MHz 7.33 dBi (peak) *	5150-5350MHz 1.15max *	5150-5350MHz 2.35dBi (eak) *
				5470-5725MHz 2.88dBi (peak) *	5470-5725MHz 5.45 dBi (peak) *	5470-5725MHz 1.38max *	5470-5725MHz 2.57dBi (peak) *
				5725-5850MHz 3.44dBi (peak) *	5725-5850MHz 5.98 dBi (peak) *	5725-5850MHz 1.56max *	5725-5850MHz 2.54dBi (peak) *

NOTE:
(*) If Rx3 only (3rd antenna receives only, e.g. for 4965AGN) then the information marked with * is not required

Antenna Peak Gain Table:

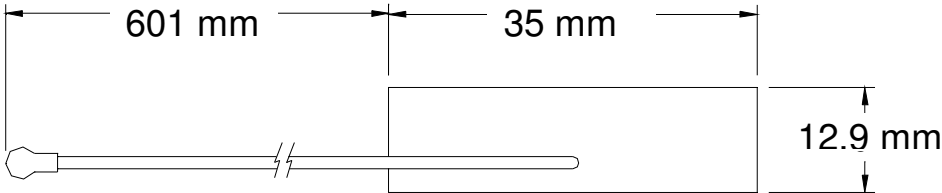
	Main antenna		Aux Antenna		MIMO Antenna	
Frequency (MHz)	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
2400	0.33	0.48	0.7	-2.94	-0.71	-2.72
2450	0.37	-1.19	1.46	-4.4	-0.05	-1.39
2500	0.86	-3.07	1.4	-4.41	0.26	-2.15
2501	0.86	-3.15	1.29	-4.44		
2593	0.22	-3.82	0.91	-4.07		
2685	1.21	-2.99	1.47	-5.12		
5150	1.02	1.52	-0.84	1.22	0.43	2.84
5250	-0.12	0.88	-1.19	0.59	-0.81	2.75
5350	1.64	2.37	0.64	2.98	1.71	4.98
5470	1.1	1.51	-0.13	1.26	1	2.79
5600	1.93	1.55	0.84	2.09	1.81	2.88
5725	1.71	1.28	0.51	1.33	2.64	2.31
5785	1.18	0.71	0.34	1.13	1.92	2.01
5850	1.17	1.87	1.01	2.48	3.04	3.44

- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/V
- If Rx3 only (3rd antenna receives only, e.g. for 4965AGN) then the information is not required for Rx3.

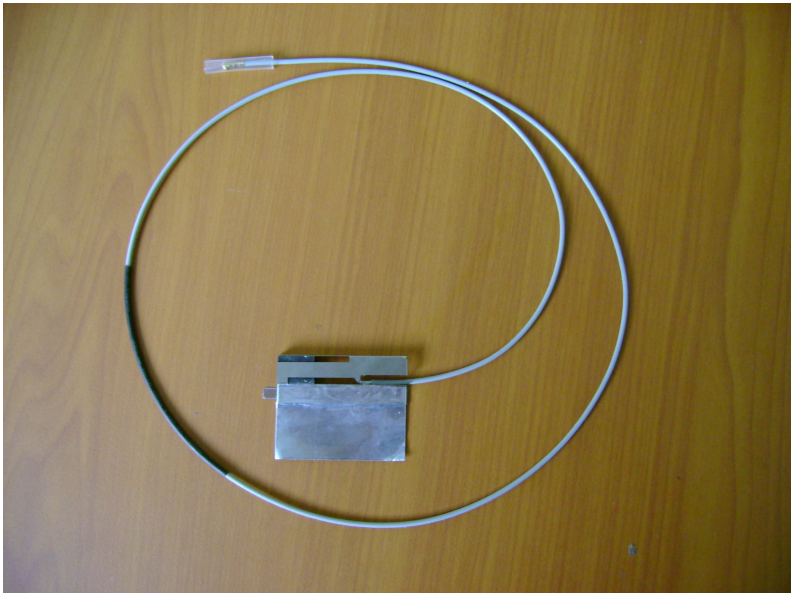
Section 2. Dimensioned Photos or Drawings of Antennas

Include a dimensioned photo and dimensioned drawing of Tx1 antenna here.

Main Antenna Dimensioned Drawing:

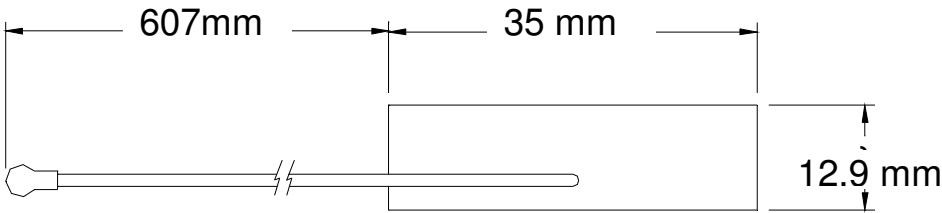


Main Antenna Photo:



Include a dimensioned photo and dimensioned drawing of Tx2 antenna here.

Aux Antenna Dimensioned Drawing:

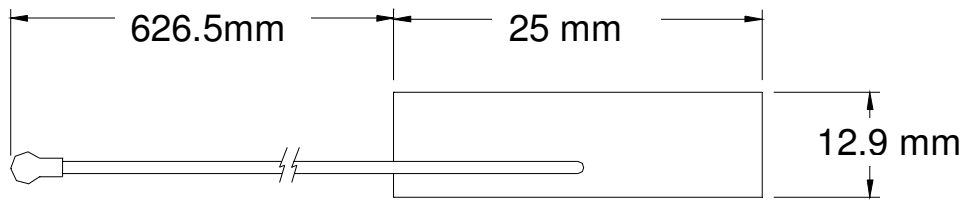


Aux Antenna Photo:



Include a dimensioned photo and dimensioned drawing of Tx3 (or Rx3) antenna here.

Mimo Antenna Dimensioned Drawing:



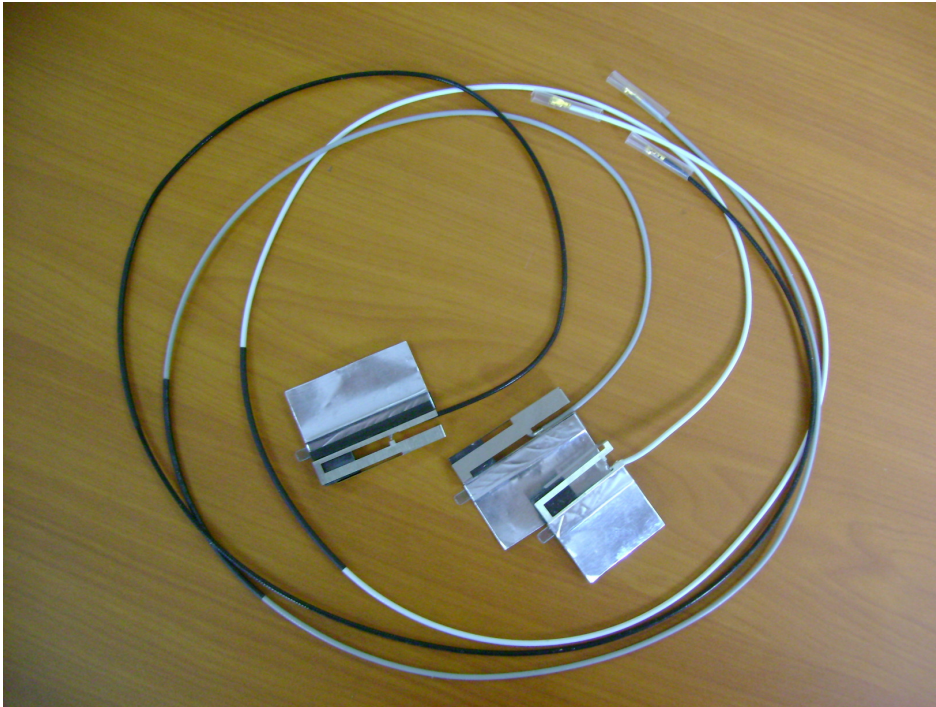
Mimo Antenna Photo:



Include front view photo of all 3 antennas here.

Antenna Manufacturer: Amphenol

Antenna Part Number: LX1110-11-000-R (Main), LX1108-11-000-R (Aux), LX1109-11-000-R (MIMO)



Include back view photo of all 3 antennas here.

Antenna Manufacturer: Amphenol

Antenna Part Number: LX1110-11-000-R (Main), LX1108-11-000-R (Aux), LX1109-11-000-R (MIMO)

