

Regulatory WLAN Antenna Information

Platform	
Platform Owner	Hewlett-Packard International Pte. Ltd.
Brand Name	Hewlett-Packard International Pte. Ltd.
Model Name	Olifant
ODM	Wistron
Target Launch Date	(2008/08/12)
Antenna	
Brand Name	Wistron NeWeb Corp.
Part Number	Tx1 Antenna: 25.90683.001 (81.EGG15.003)
	Tx2 Antenna: 25.90684.001 (81.EGG15.004)

Module	
	<input type="checkbox"/> WM3B2200BG
	<input type="checkbox"/> WM3B2915ABG
	<input type="checkbox"/> WM3945ABG
	<input type="checkbox"/> 4965AGN
	<input type="checkbox"/> 4965AG_
	<input type="checkbox"/> 533ANX Family
	<input type="checkbox"/> 512ANX Family
	<input type="checkbox"/> 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 and 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 photographs of antennas for approval submission). Taiwan requires pictures of each antenna type shown in the system.	Required	Required	Desired	Required (Photos)	Required (Photos)
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:

Laptop Mode:

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)
Main Antenna (WNC P/N: 81.EGG15.003) (customer P/N: 25.90683.001)	Wistron Neweb Corporation	PIFA	P/N:137I507B(231) 50 ohm Coaxial. length: 507 mm diameter: 1.37 mm Connector: IPEX	2400-2500MHz 2.30 dBi (peak)	2400-2500MHz 3.84 dBi (peak)	2400-2500MHz 2.0 max	2400-2500MHz 1.54 dBi (peak)
				5150-5350MHz 1.45 dBi (peak)	5150-5350MHz 3.87 dBi (peak)	5150-5350MHz 2.5 max	5150-5350MHz 2.41 dBi (peak)
				5470-5725MHz 1.10 dBi (peak)	5470-5725MHz 3.65 dBi (peak)	5470-5725MHz 2.5 max	5470-5725MHz 2.54 dBi (peak)
				5725-5850MHz 0.09 dBi (peak)	5725-5850MHz 2.67 dBi (peak)	5725-5850MHz 2.5 max	5725-5850MHz 2.58 dBi (peak)
AUX Antenna (WNC P/N: 81.EGG15.004) (customer P/N: 25.90684.001)	Wistron Neweb Corporation	PIFA	P/N: 137I593B(231) 50 ohm Coaxial. length: 593 mm diameter: 1.37 mm Connector: IPEX	2400-2500MHz 1.60 dBi (peak)	2400-2500MHz 3.14 dBi (peak)	2400-2500MHz 2.0 max	2400-2500MHz 1.54 dBi (peak)
				5150-5350MHz 1.94 dBi (peak)	5150-5350MHz 4.35 dBi (peak)	5150-5350MHz 2.5 max	5150-5350MHz 2.41 dBi (peak)
				5470-5725MHz 1.73 dBi (peak)	5470-5725MHz 4.27 dBi (peak)	5470-5725MHz 2.5 max	5470-5725MHz 2.54 dBi (peak)
				5725-5850MHz 0.61 dBi (peak)	5725-5850MHz 3.19 dBi (peak)	5725-5850MHz 2.5 max	5725-5850MHz 2.58 dBi (peak)

Tablet Mode:

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	x Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
Main Antenna (WNC P/N: 81.EGG15.003) (customer P/N: 25.90683.001)	Wistron Neweb Corporation	PIFA	P/N:137I507B(231) 50 ohm Coaxial. length: 507 mm diameter: 1.37 mm Connector: IPEX	2400-2500MHz -0.98 dBi (peak)	2400-2500MHz 0.5 dBi (peak)	2400-2500MHz 2.0 max	2400-2500MHz 1.54 dBi (peak)
				5150-5350MHz 0.8 dBi (peak)	5150-5350MHz 3.25 dBi (peak)	5150-5350MHz 2.5 max	5150-5350MHz 2.41 dBi (peak)
				5470-5725MHz 2.56 dBi (peak)	5470-5725MHz 5.11 dBi (peak)	5470-5725MHz 2.5 max	5470-5725MHz 2.54 dBi (peak)
				5725-5850MHz 3.58 dBi (peak)	5725-5850MHz 6.16 dBi (peak)	5725-5850MHz 2.5 max	5725-5850MHz 2.58 dBi (peak)
AUX Antenna (WNC P/N: 81.EGG15.004) (customer P/N: 25.90684.001)	Wistron Neweb Corporation	PIFA	P/N: 137I593B(231) 50 ohm Coaxial. length: 593 mm diameter: 1.37 mm Connector: IPEX	2400-2500MHz -0.42 dBi (peak)	2400-2500MHz 1.11 dBi (peak)	2400-2500MHz 2.0 max	2400-2500MHz 1.54 dBi (peak)
				5150-5350MHz -0.50 dBi (peak)	5150-5350MHz 1.91 dBi (peak)	5150-5350MHz 2.5 max	5150-5350MHz 2.41 dBi (peak)
				5470-5725MHz -1.48 dBi (peak)	5470-5725MHz 1.07 dBi (peak)	5470-5725MHz 2.5 max	5470-5725MHz 2.54 dBi (peak)
				5725-5850MHz -0.95 dBi (peak)	5725-5850MHz 1.63 dBi (peak)	5725-5850MHz 2.5 max	5725-5850MHz 2.58 dBi (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:**Laptop Mode:**

Frequency (MHz)	Tx1 antenna		Tx2 Antenna	
	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
2400	1.69	-0.40	0.11	-2.85
2450	2.30	-0.27	1.60	-1.00
2500	0.94	0.34	1.43	-1.33
5150	1.11	0.30	1.03	-2.79
5250	0.79	-1.07	1.08	-1.24
5350	1.45	-0.95	1.94	-0.62
5470	1.10	-0.37	1.73	-1.15
5600	0.50	-3.28	-0.32	-3.40
5725	0.09	-2.85	0.61	-4.07
5785	0.36	-2.82	-0.57	-3.81
5850	0.24	-1.60	-0.11	-2.55

Tablet Mode:

Frequency (MHz)	Tx1 antenna		Tx2 Antenna	
	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
2400	-4.04	-2.57	-2.83	-0.44
2450	-3.99	-2.77	-3.51	-0.42
2500	-0.98	-3.02	-3.68	-1.91
5150	0.54	-3.21	-2.43	-2.01
5250	-0.18	-3.16	-0.50	-3.50
5350	0.84	-3.32	-2.29	-3.33
5470	1.03	-2.31	-1.63	-2.92
5600	2.56	0.44	-1.79	-1.48
5725	3.58	0.96	-0.95	-1.12
5785	2.71	0.80	-0.66	-2.61
5850	2.10	0.60	-0.59	-4.13

- 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.

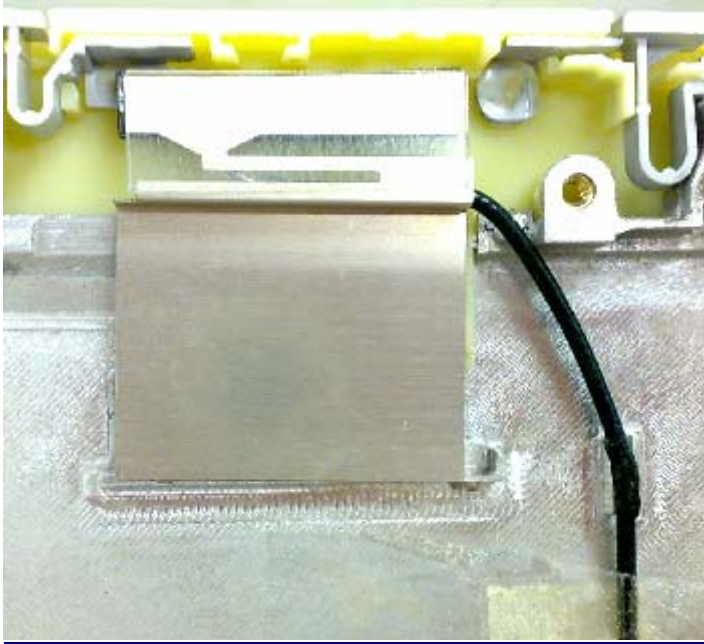
Section 2. Dimensioned Photos or Drawings of Antennas

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

Tx1 Antenna Dimensioned Drawing:



Tx1 Antenna Photo:

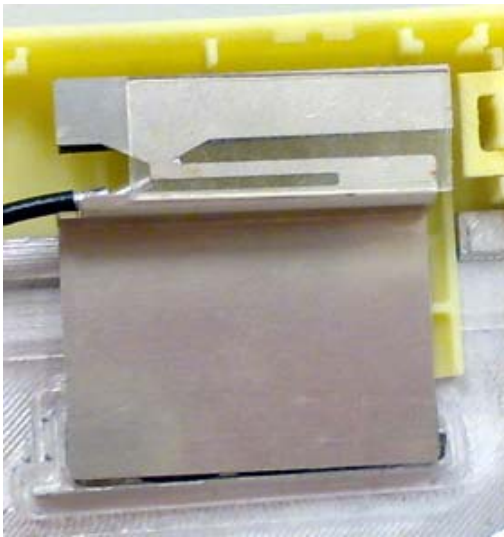


Include a dimensioned photo and dimensioned drawing of Tx2 antenna here.

Tx2 Antenna Dimensioned Drawing:



Tx2 Antenna Photo:

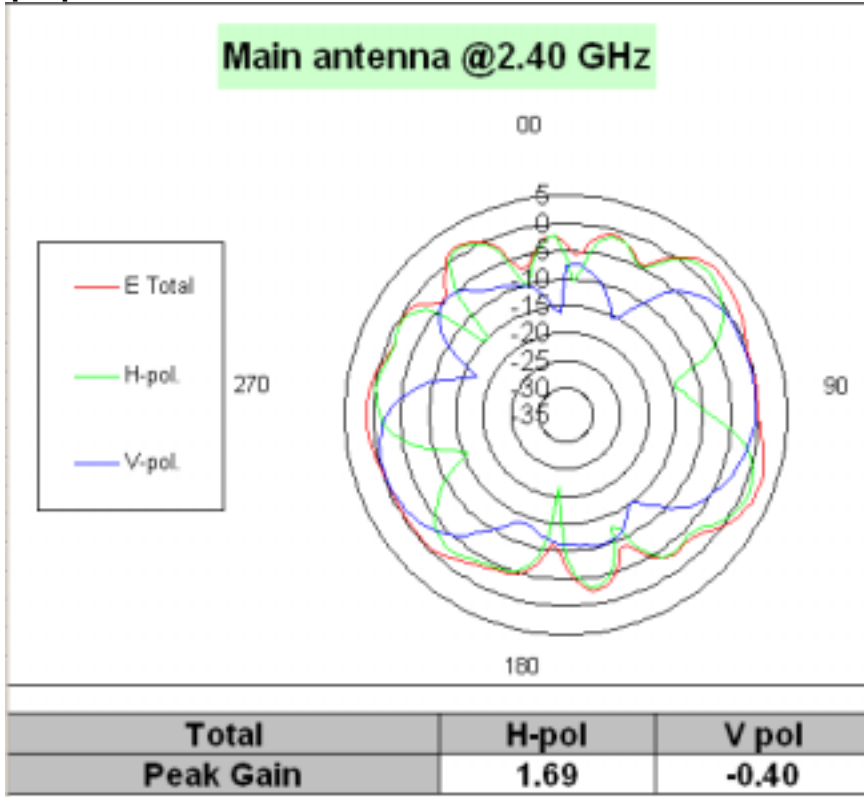


Section 3. Radiation characteristics of antennae Loaded in Host Platform

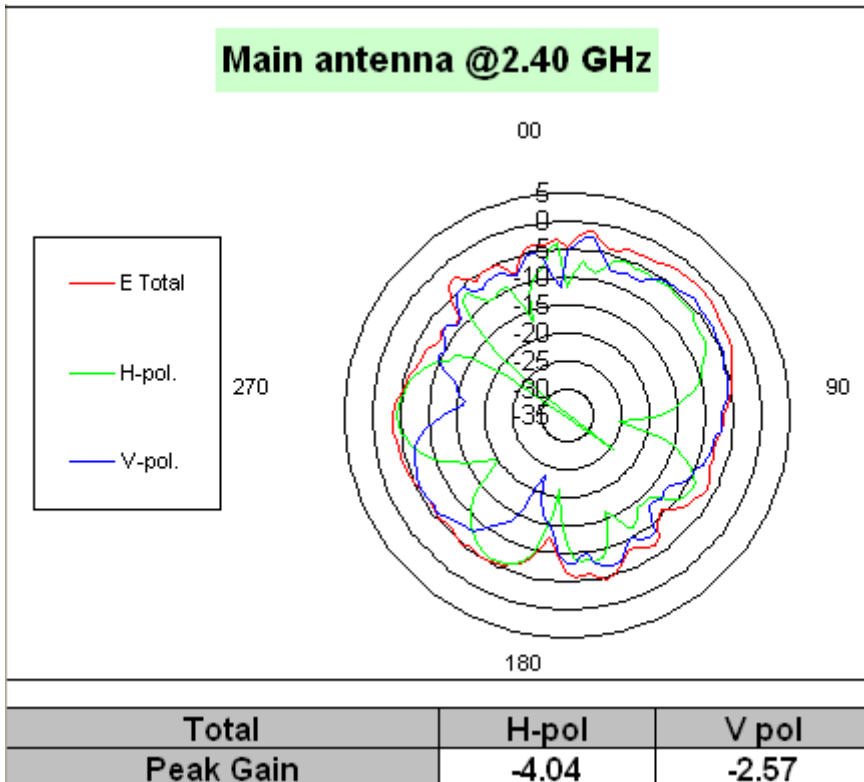
2400-2700MHz radiation characteristic

Tx1 antenna: 2400 MHz

Laptop Mode:

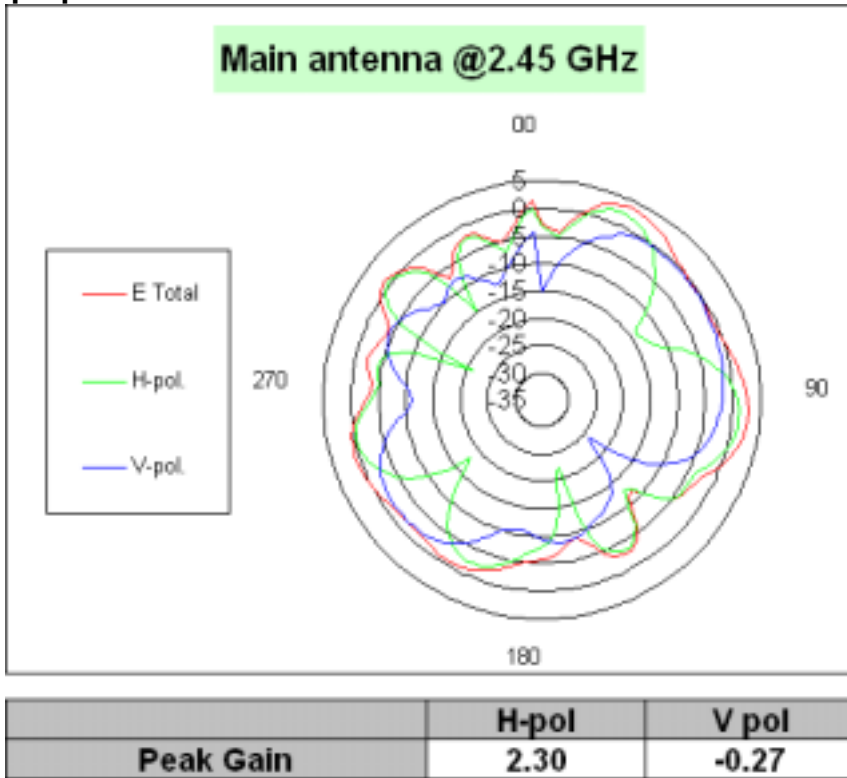


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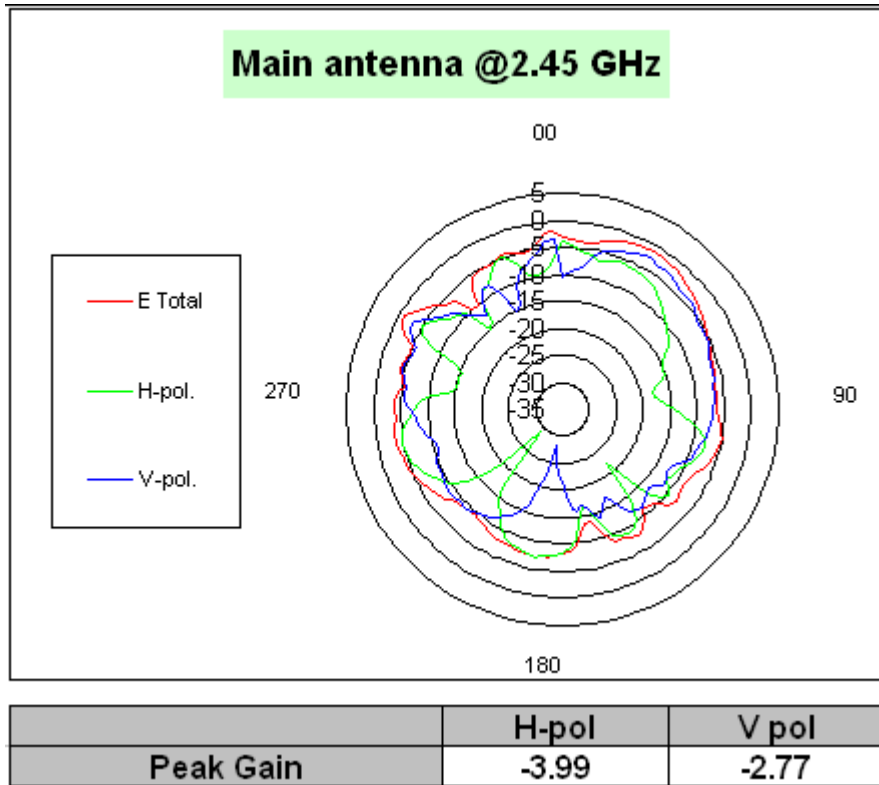


Tx1 antenna: 2450 MHz

Laptop Mode:

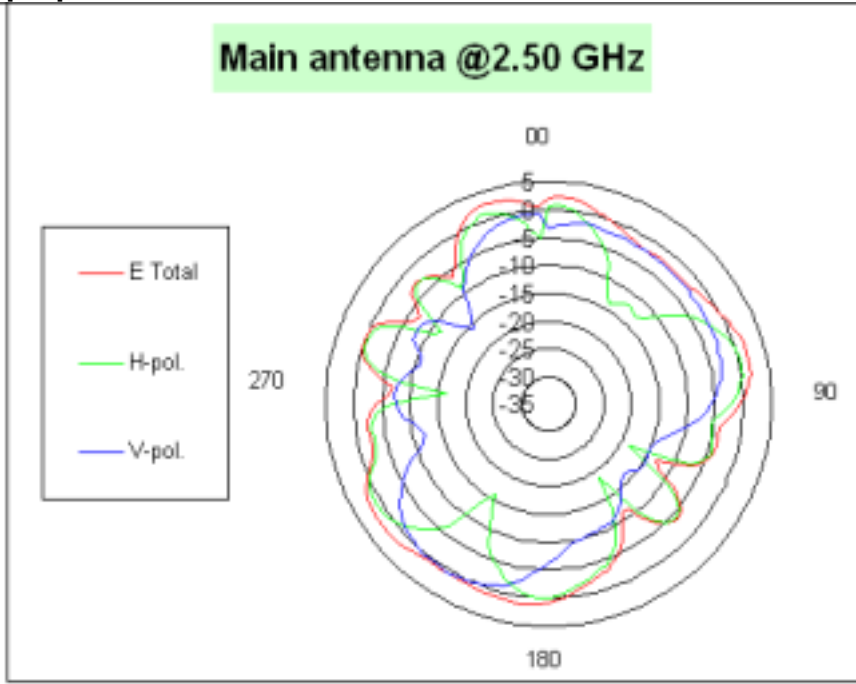


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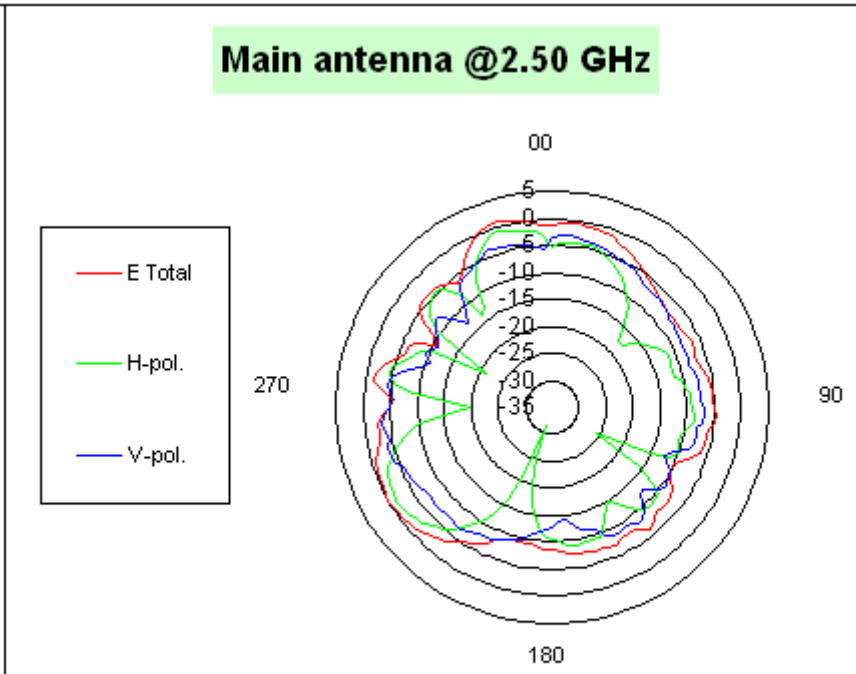
Tx1 antenna: 2500 MHz

Laptop Mode:



	H-pol	V pol
Peak Gain	0.94	0.34

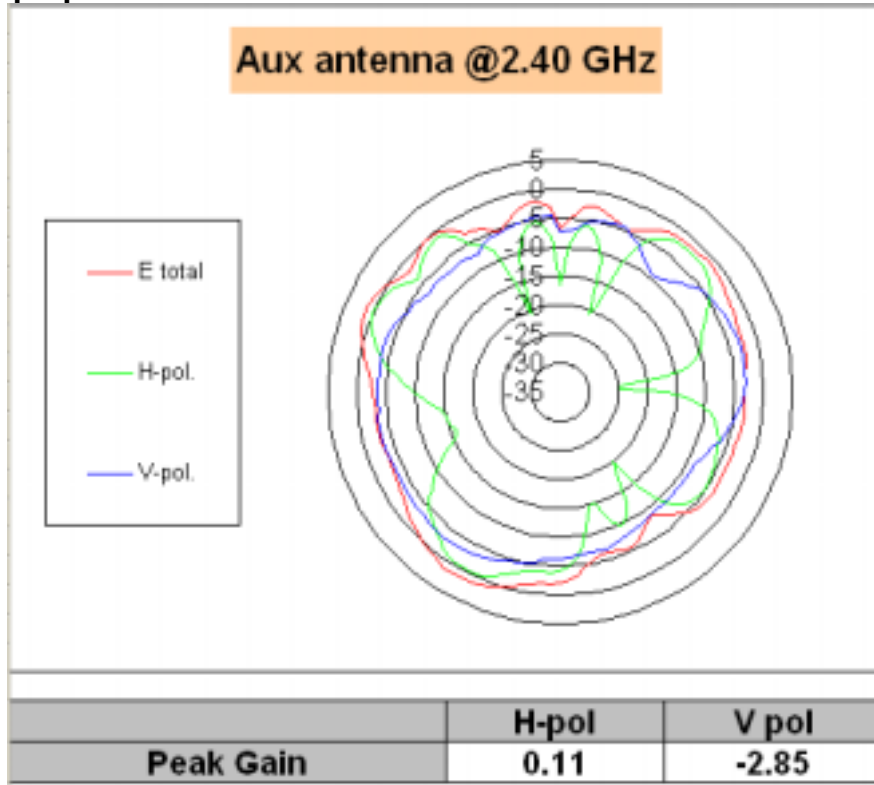
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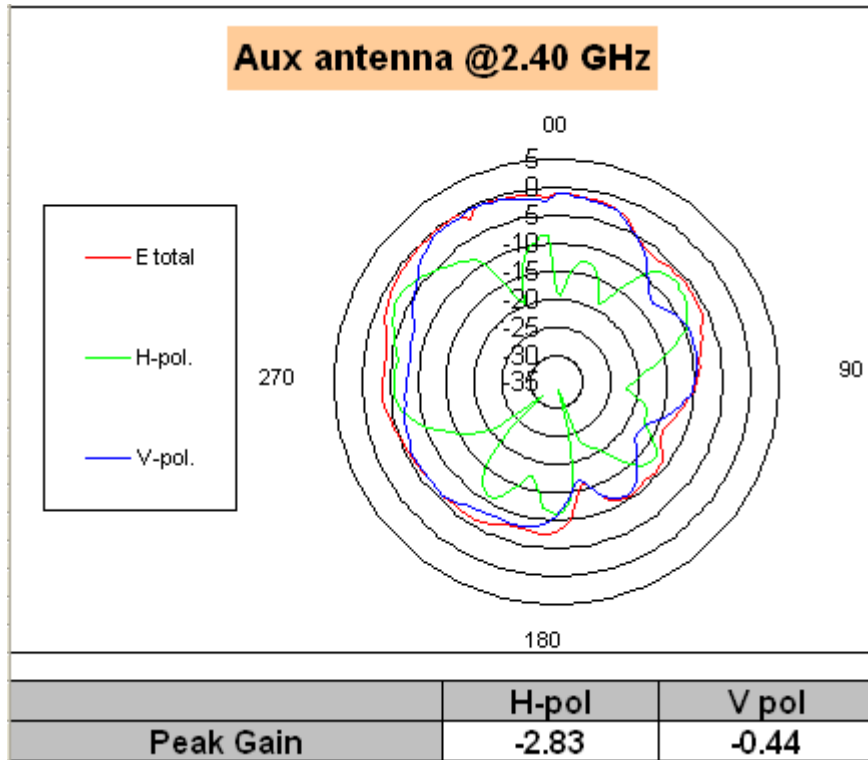
	H-pol	V pol
Peak Gain	-0.98	-3.02

Tx2 antenna: 2400 MHz

Laptop Mode:

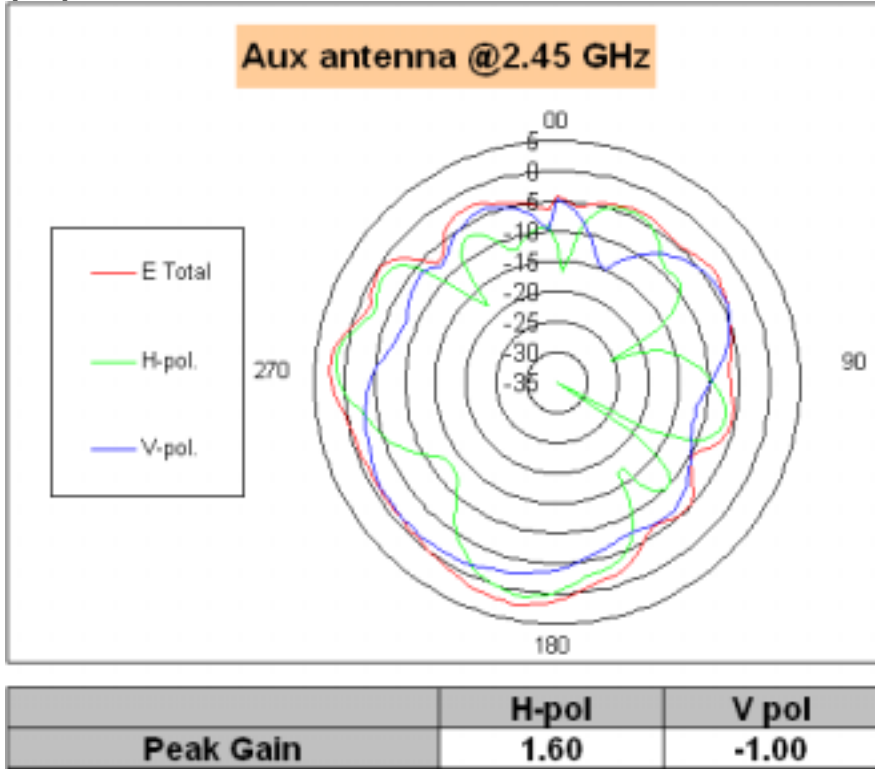


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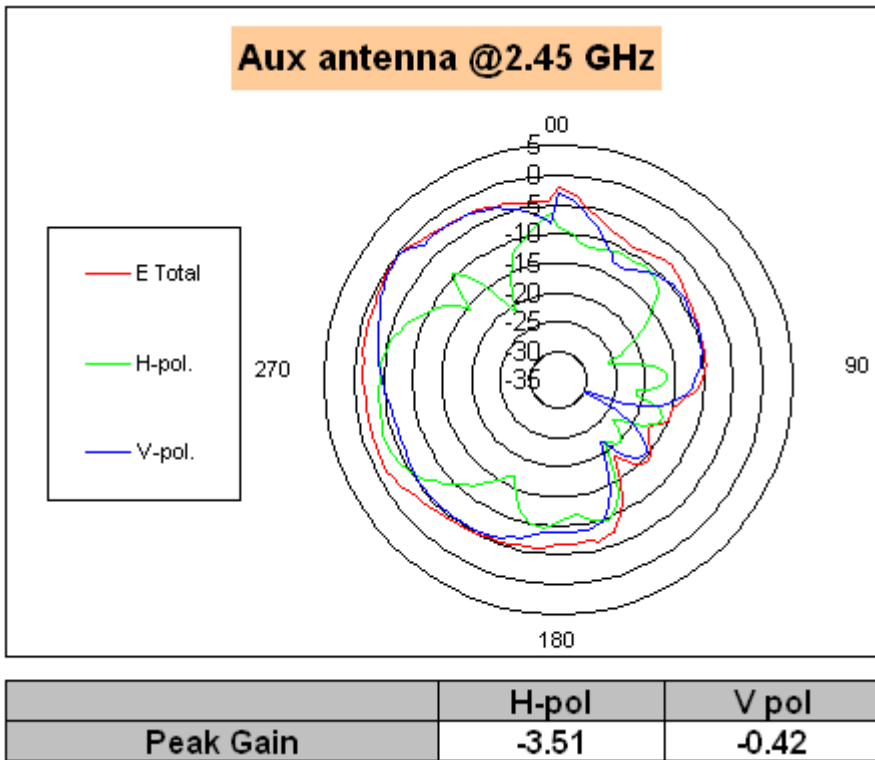


Tx2 antenna: 2450 MHz

Laptop Mode:

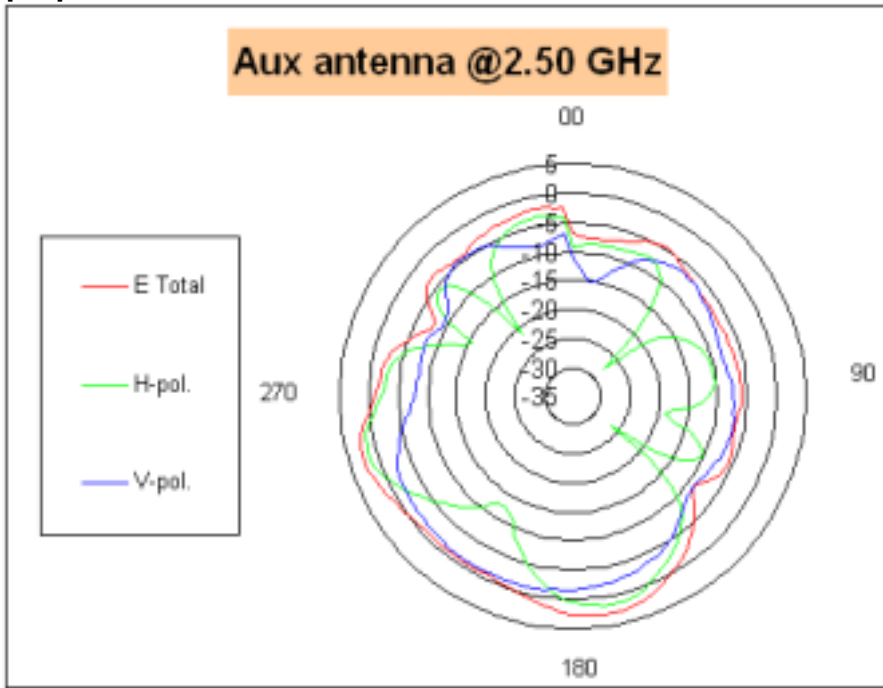


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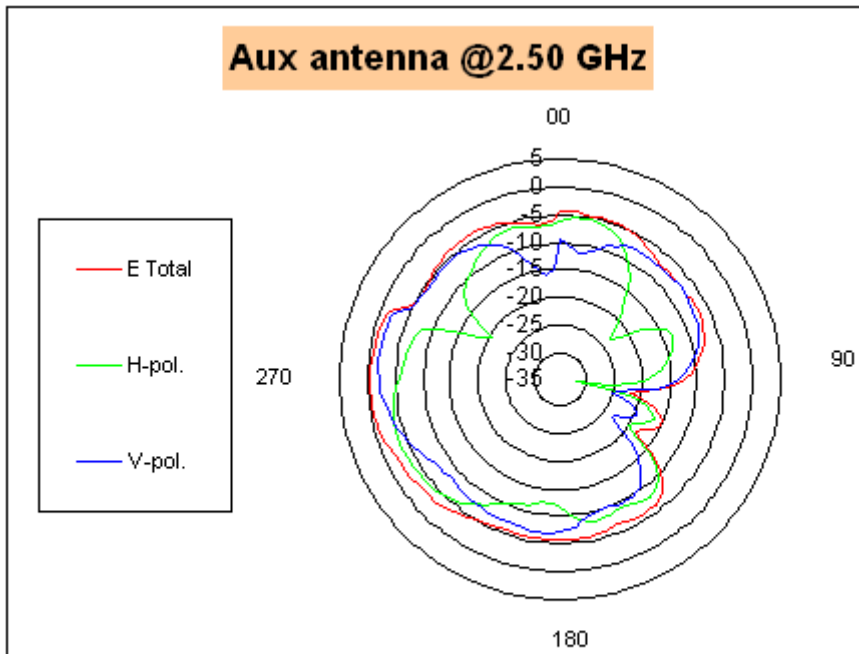
Tx2 antenna: 2500 MHz

Laptop Mode:



	H-pol	V pol
Peak Gain	1.43	-1.33

Tablet Mode:

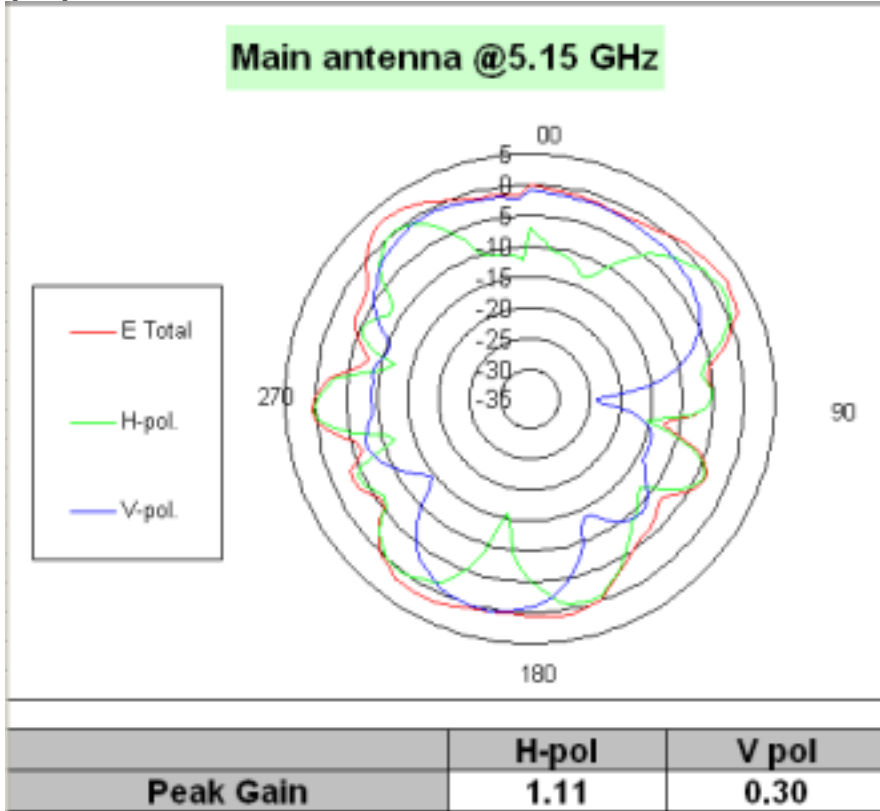


	H-pol	V pol
Peak Gain	-3.68	-1.91

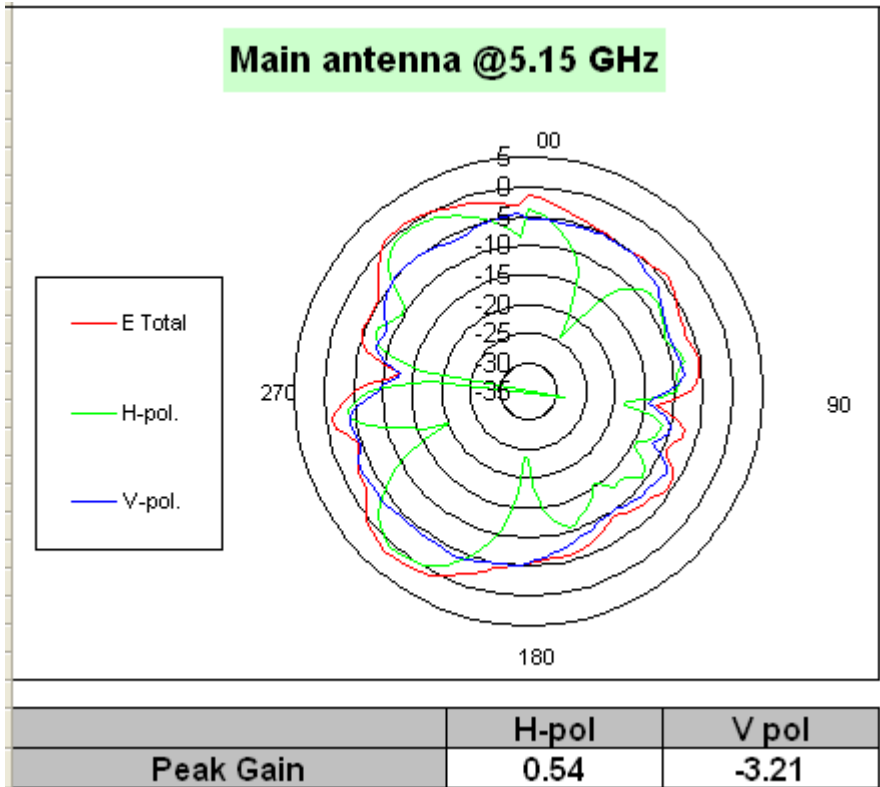
5150-5350 MHz radiation characteristic

Tx1 antenna: 5150 MHz

Laptop Mode:

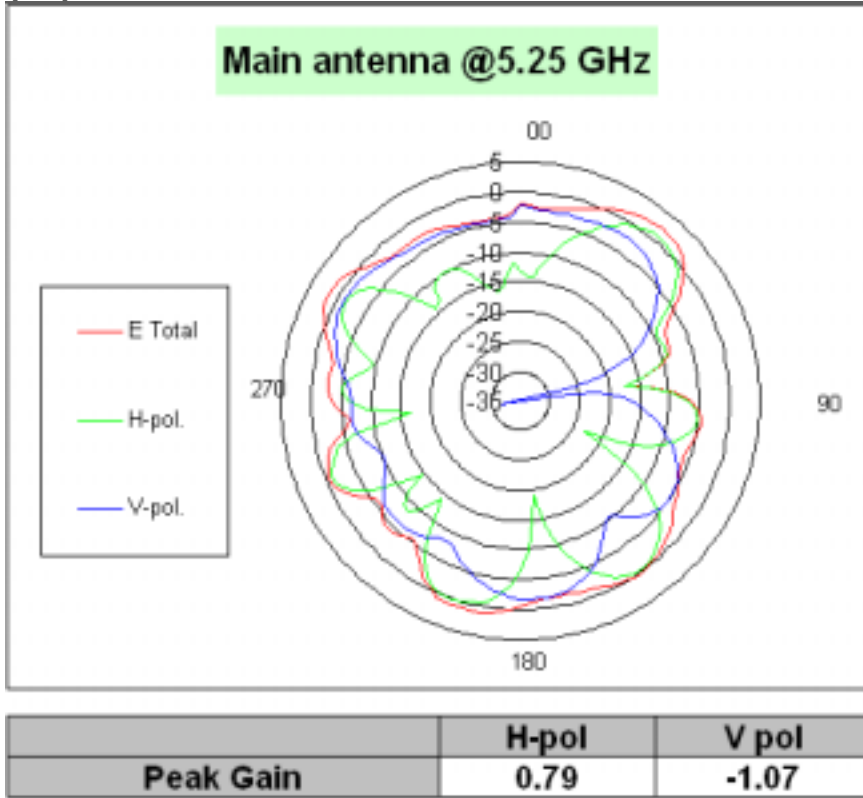


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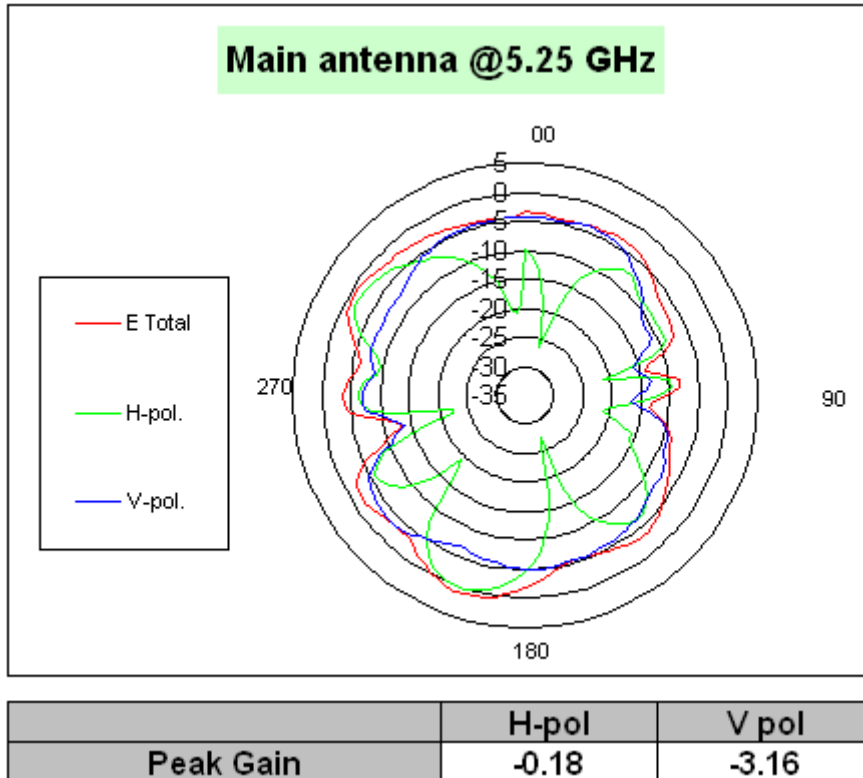


Tx1 antenna: 5250 MHz

Laptop Mode:

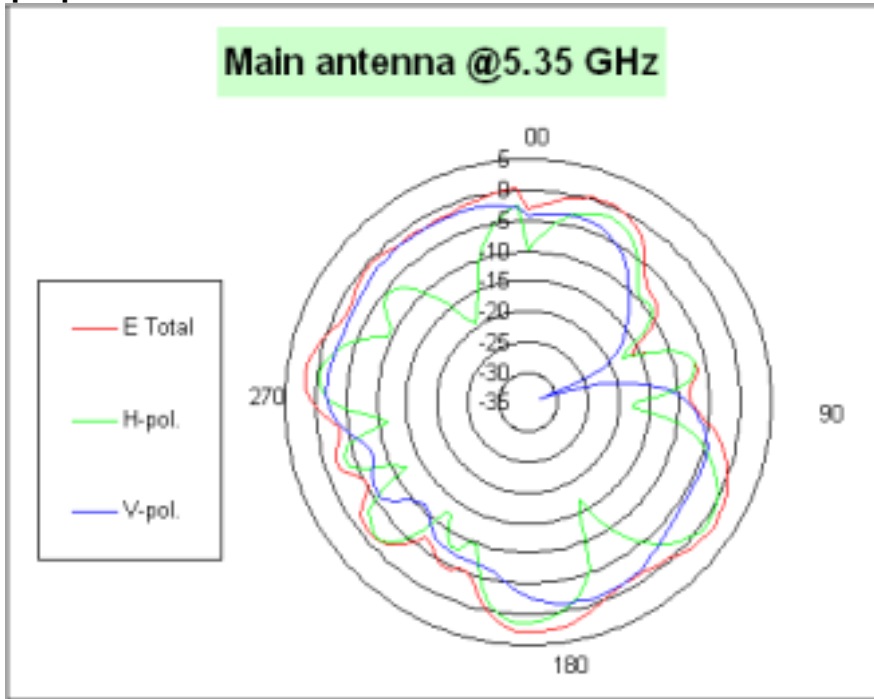


Tablet Mode:



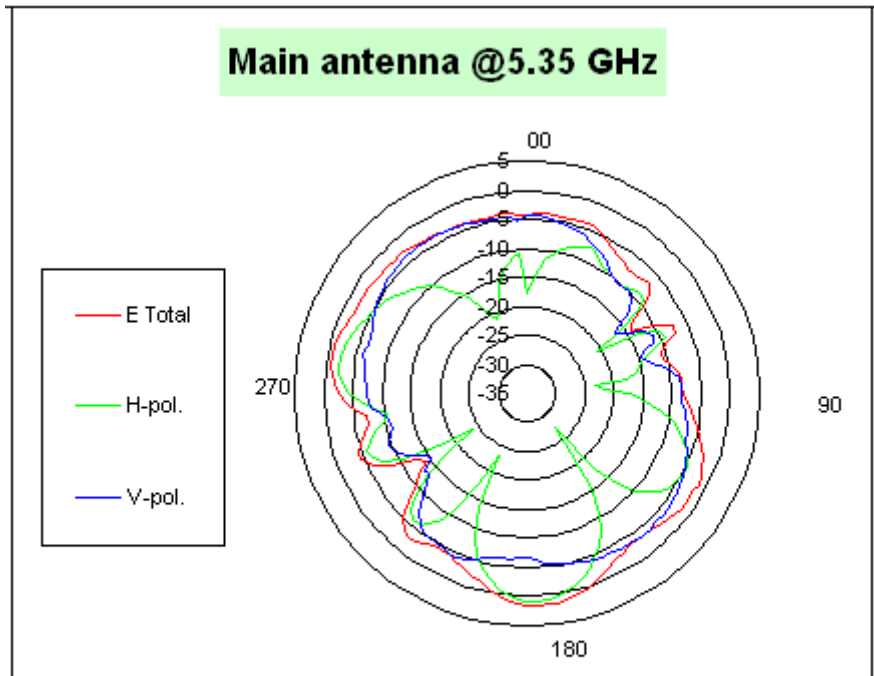
Tx1 antenna: 5350 MHz

Laptop Mode:



	H-pol	V pol
Peak Gain	1.45	-0.95

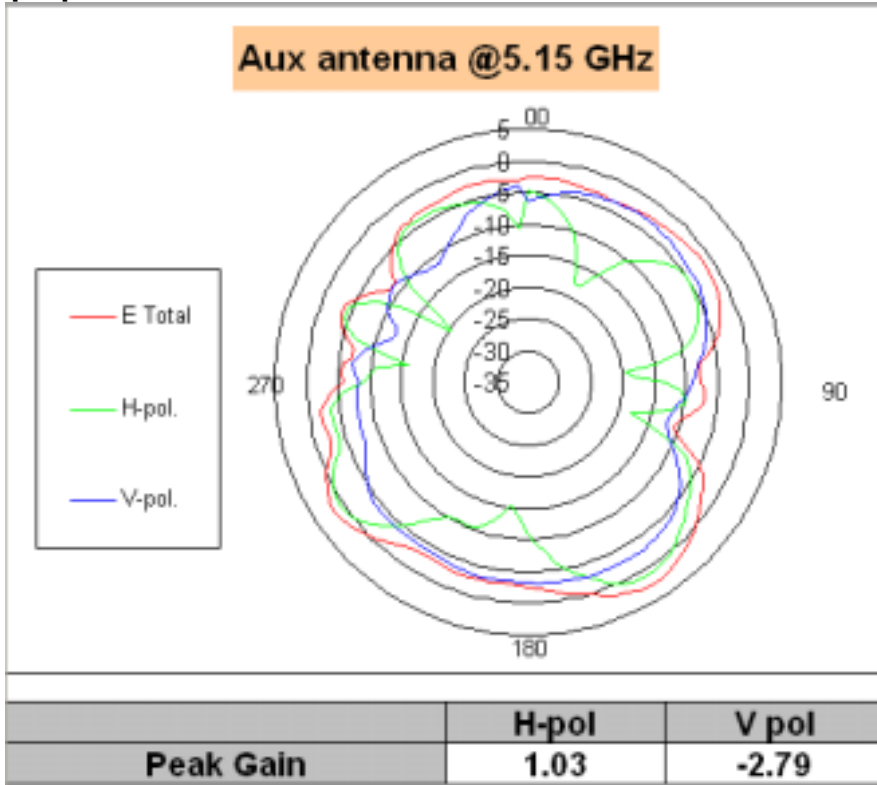
Tablet Mode:



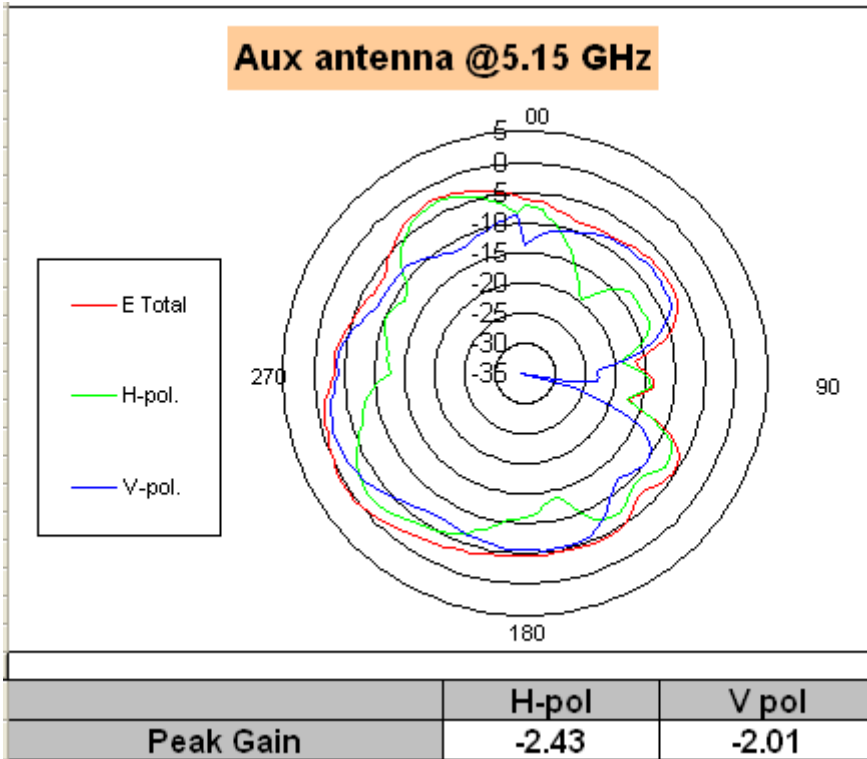
	H-pol	V pol
Peak Gain	0.84	-3.32

Tx2 antenna: 5150 MHz

Laptop Mode:

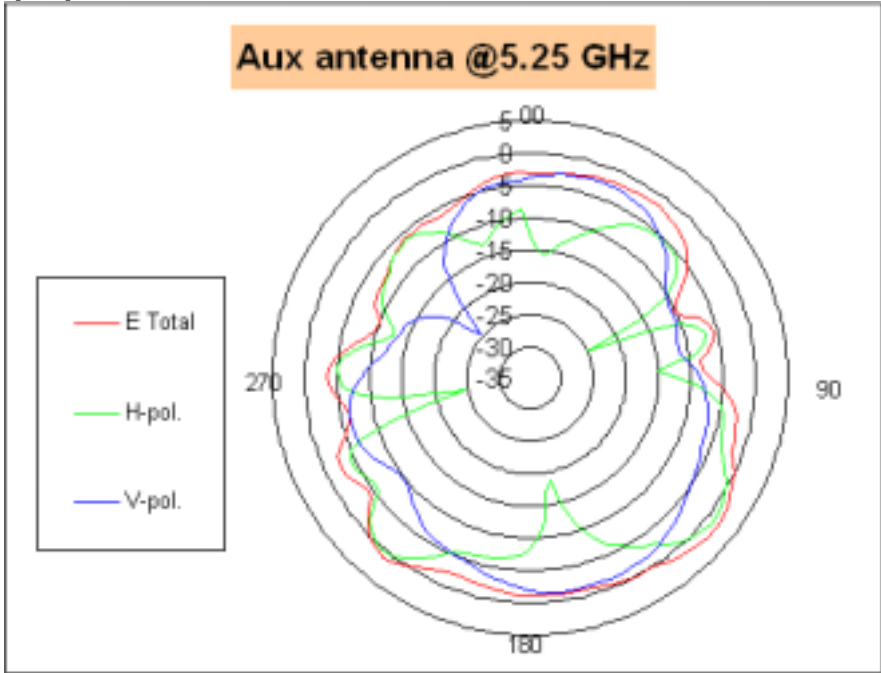


Tablet Mode:



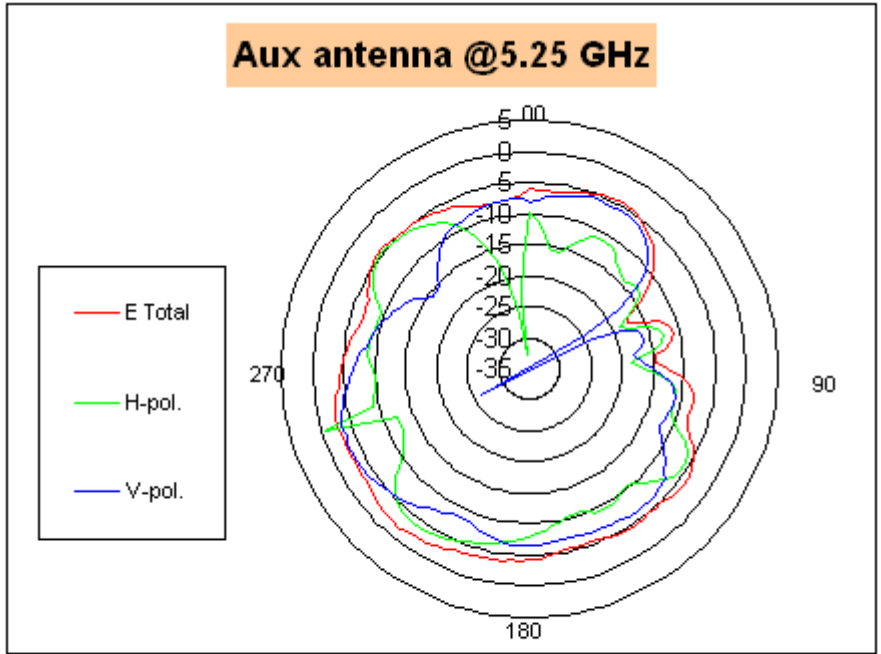
Tx2 antenna: 5250 MHz

Laptop Mode:



	H-pol	V pol
Peak Gain	1.08	-1.24

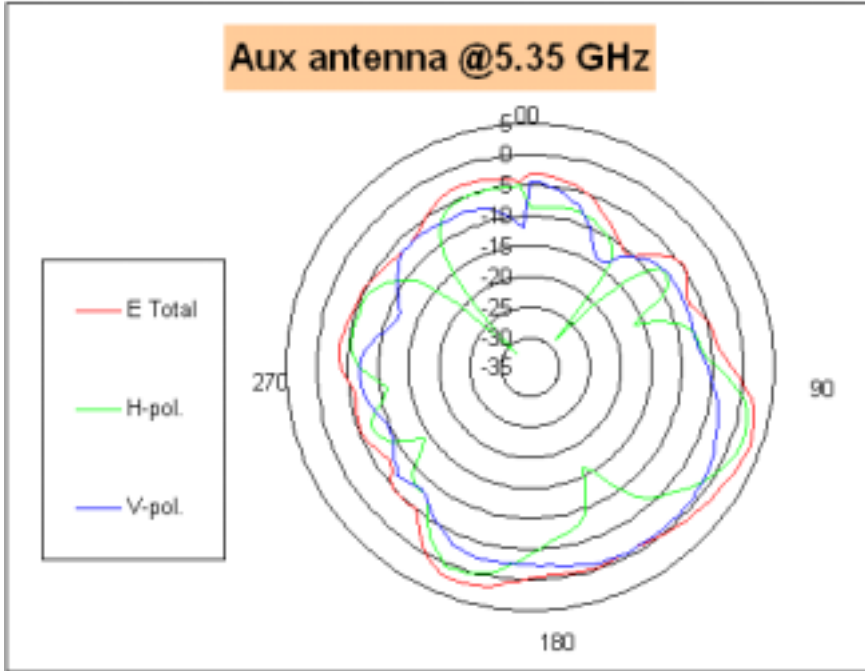
Tablet Mode:



	H-pol	V pol
Peak Gain	-0.50	-3.50

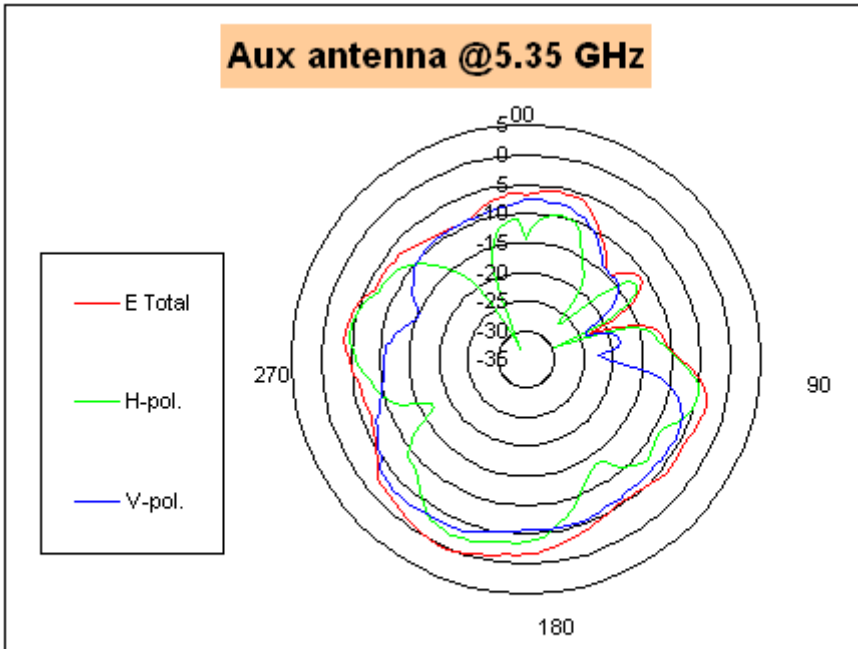
Tx2 antenna: 5350 MHz

Laptop Mode:



	H-pol	V pol
Peak Gain	1.94	-0.62

Tablet Mode:

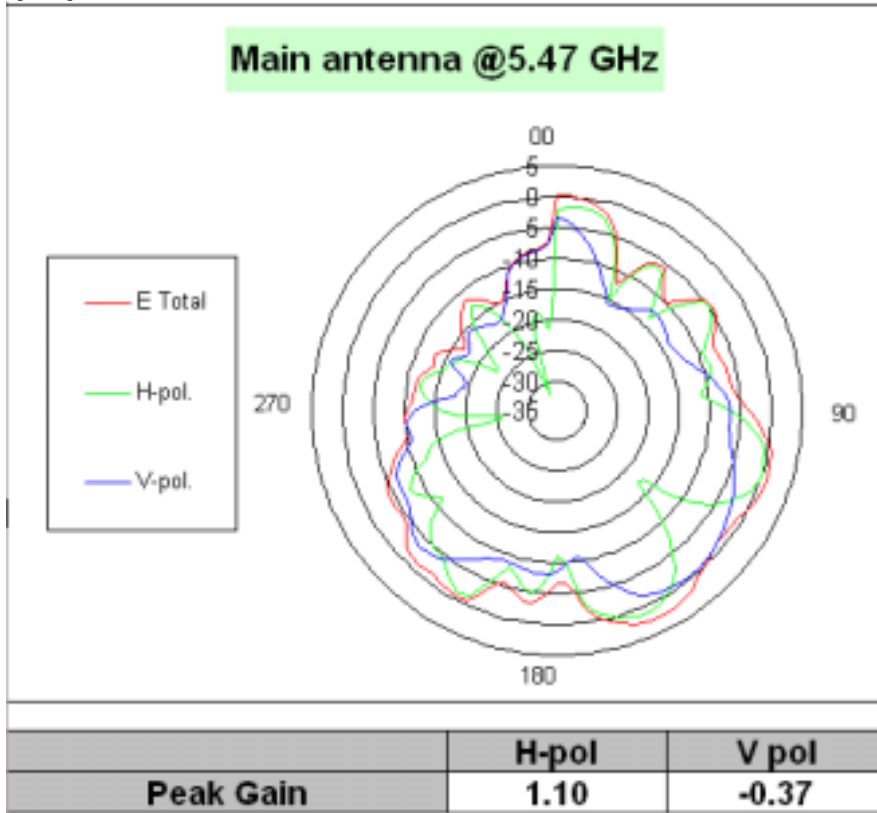


	H-pol	V pol
Peak Gain	-2.29	-3.33

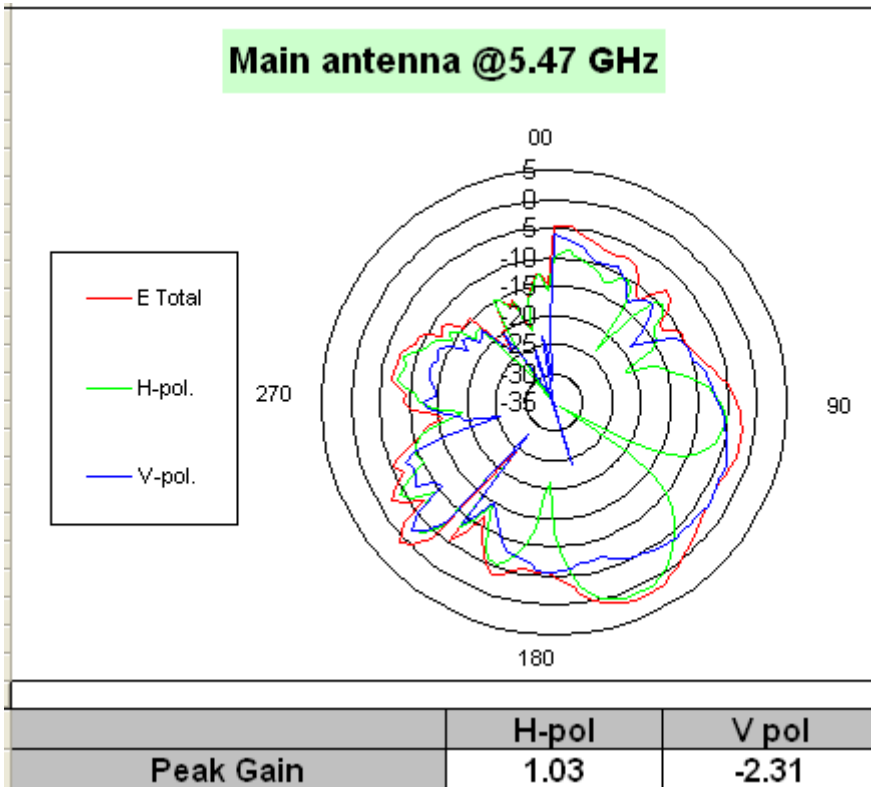
5470-5725MHz radiation characteristic

Tx1 antenna: 5470 MHz

Laptop Mode:

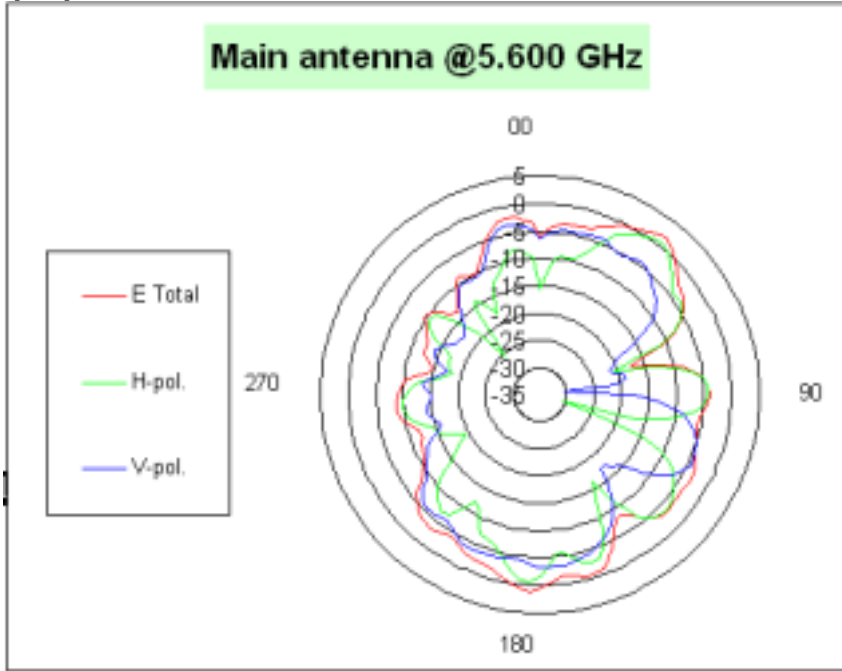


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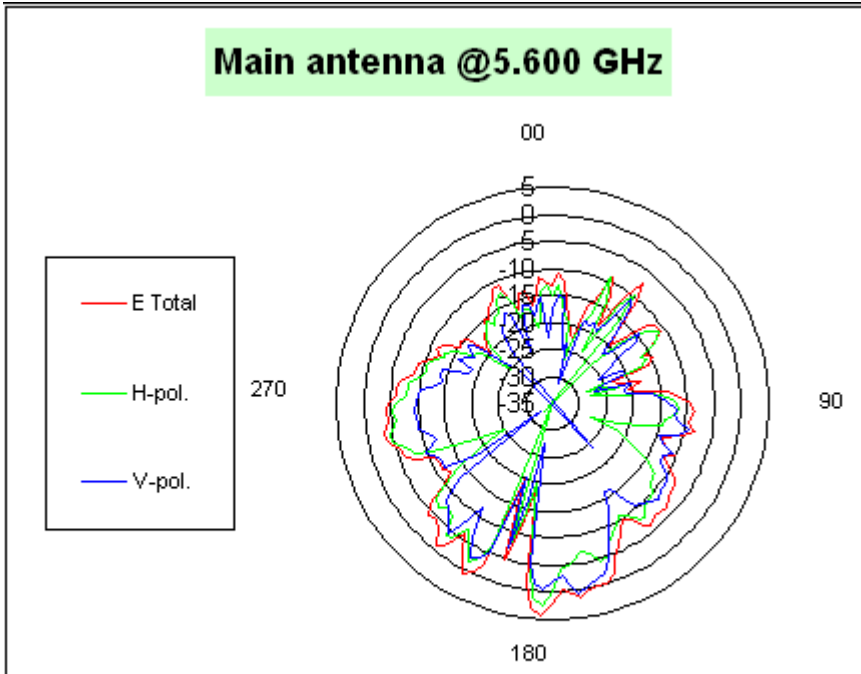
Tx1 antenna: 5600 MHz

Laptop Mode:



	H-pol	V pol
Peak Gain	0.50	-3.28

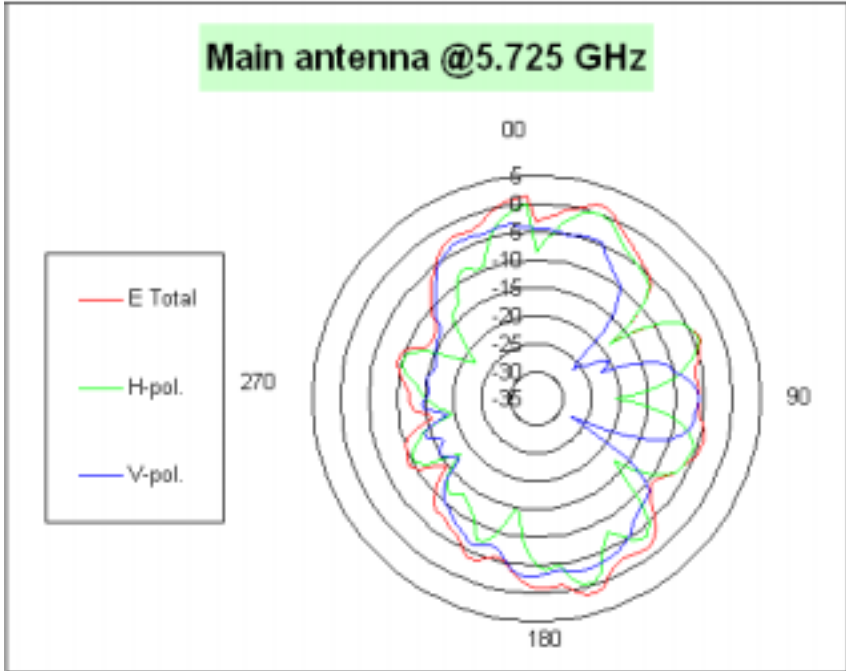
Tablet Mode:



	H-pol	V pol
Peak Gain	2.56	0.44

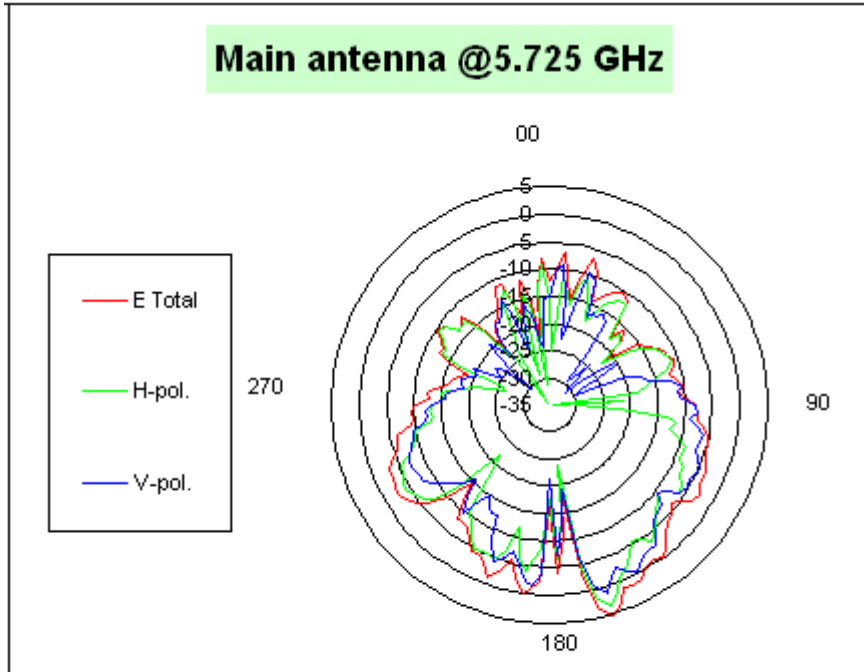
Tx1 antenna: 5725 MHz

Laptop Mode:



	H-pol	V pol
Peak Gain	0.09	-2.85

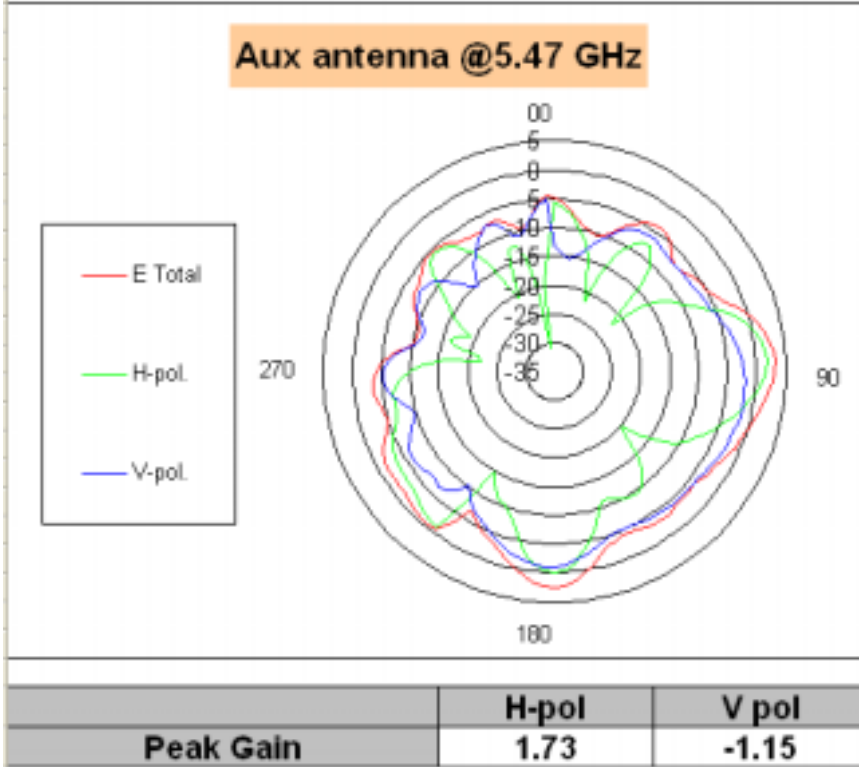
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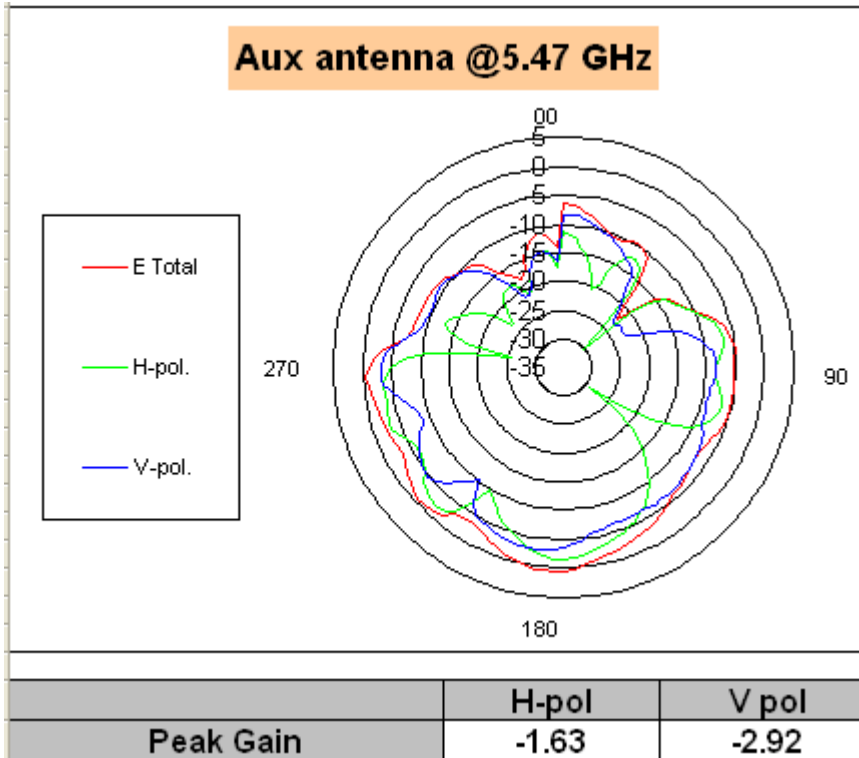
	H-pol	V pol
Peak Gain	3.58	0.96

Tx2 antenna: 5470 MHz

Laptop Mode:

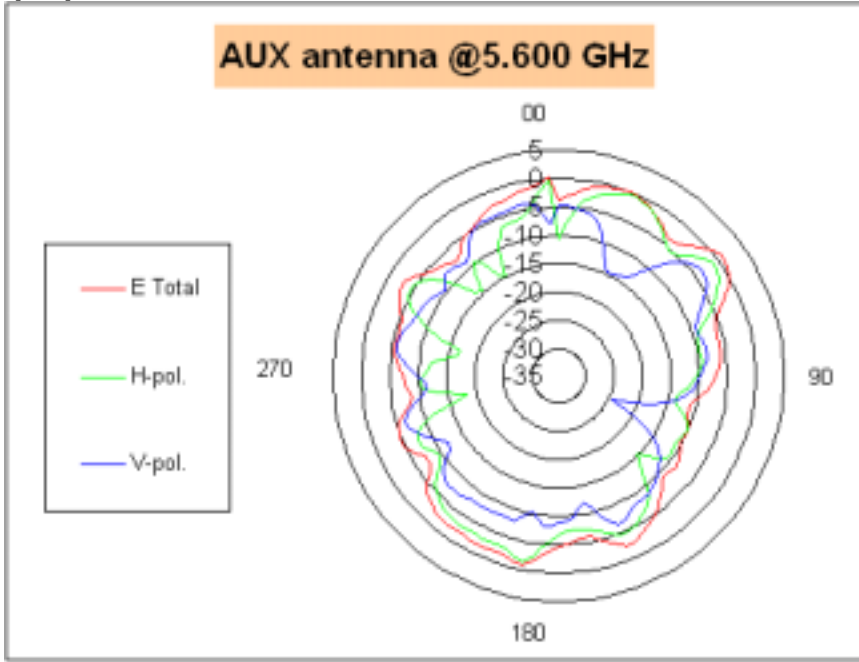


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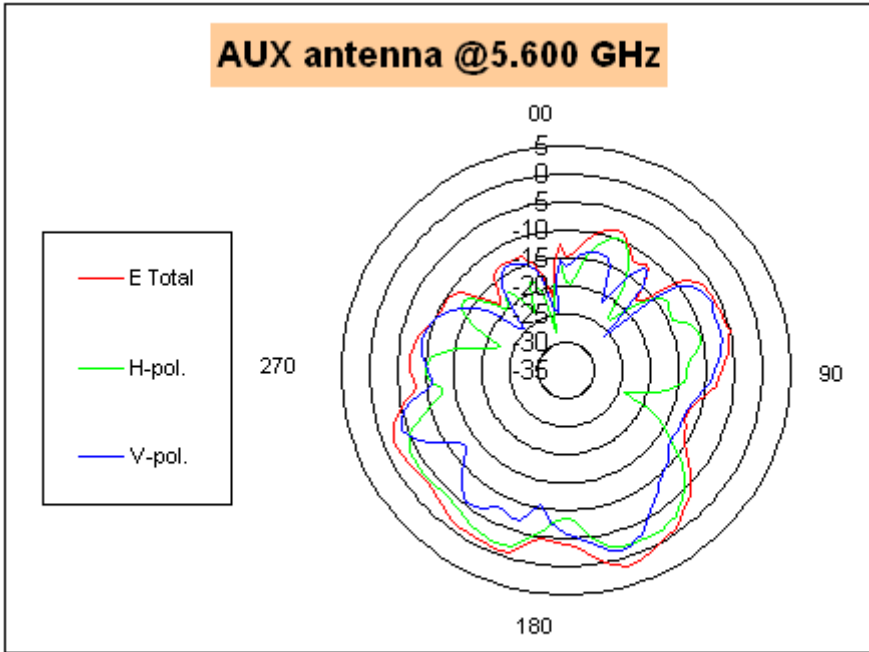
Tx2 antenna: 5600 MHz

Laptop Mode:



	H-pol	V pol
Peak Gain	-0.32	-3.40

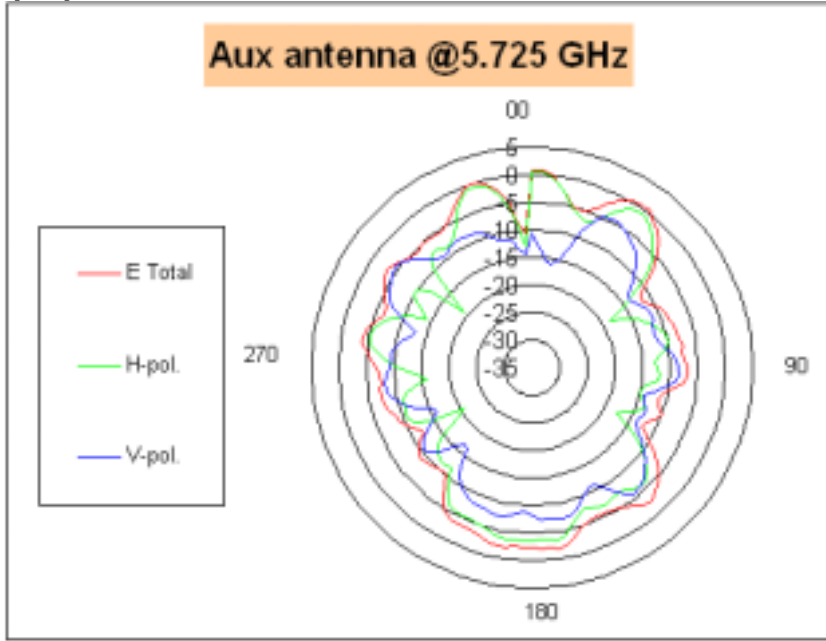
Tablet Mode:



	H-pol	V pol
Peak Gain	-1.79	-1.48

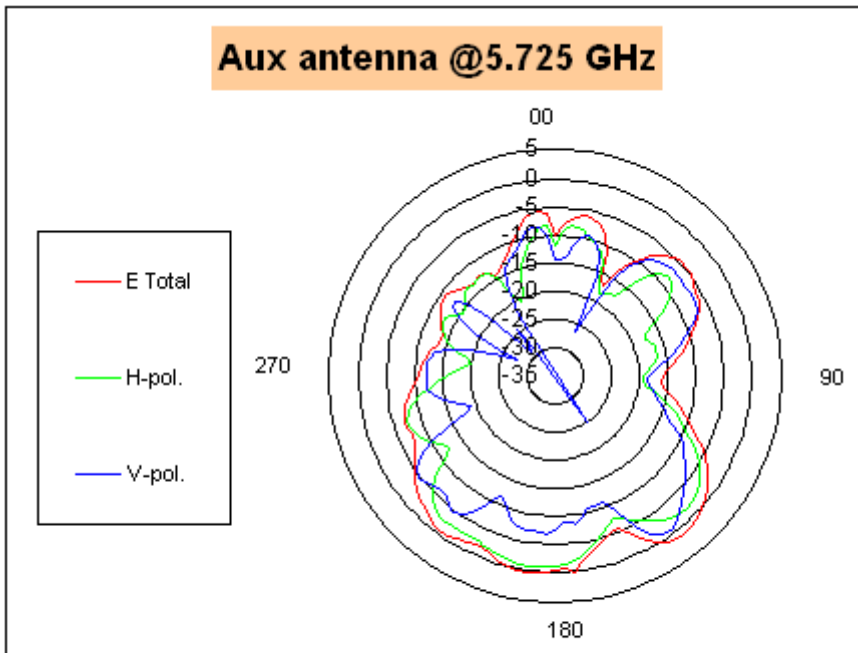
Tx2 antenna: 5725 MHz

Laptop Mode:



	H-pol	V pol
Peak Gain	0.61	-4.07

Tablet Mode:

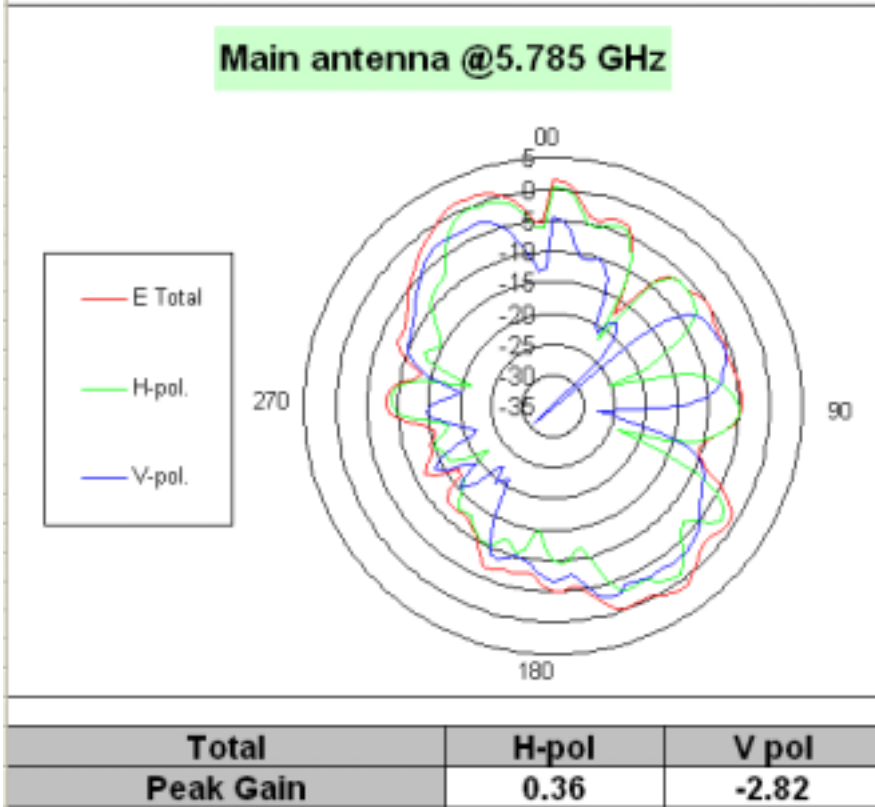


	H-pol	V pol
Peak Gain	-0.95	-1.12

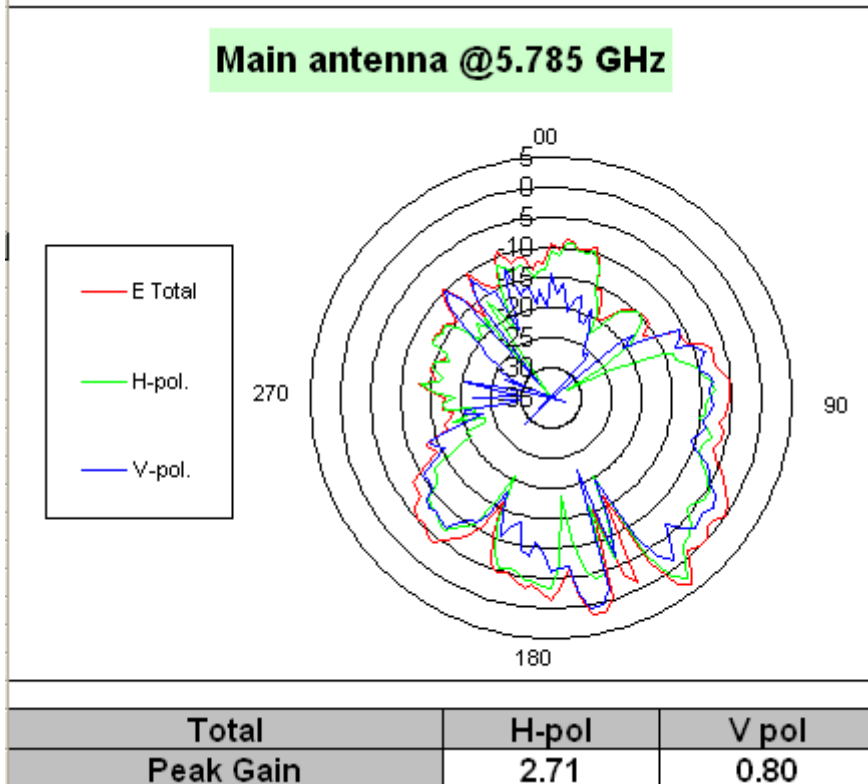
5785-5850 MHz radiation characteristic

Tx1 antenna: 5785 MHz

Laptop Mode:

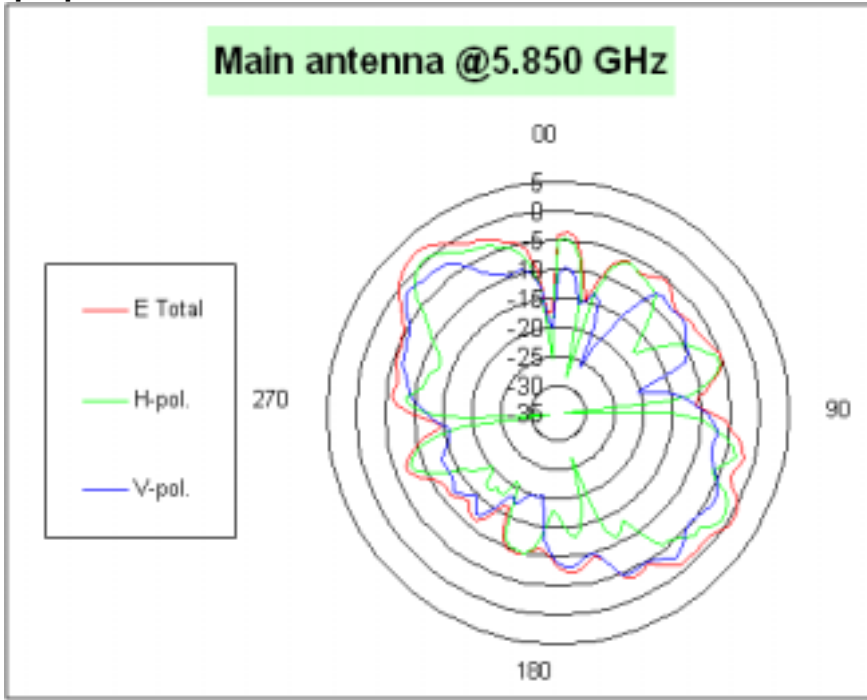


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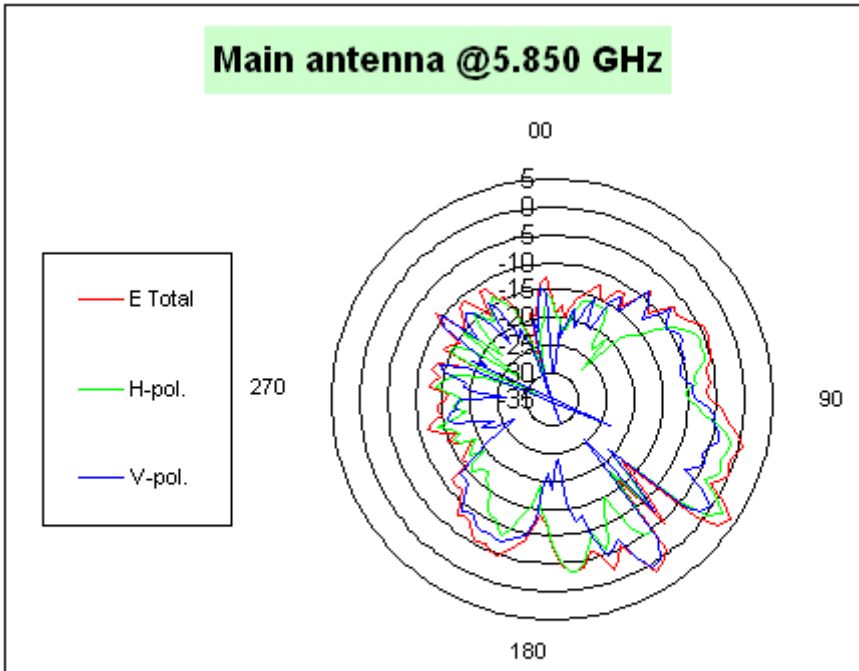
Tx1 antenna: 5850 MHz

Laptop Mode:



Total	H-pol	V pol
Peak Gain	0.24	-1.60

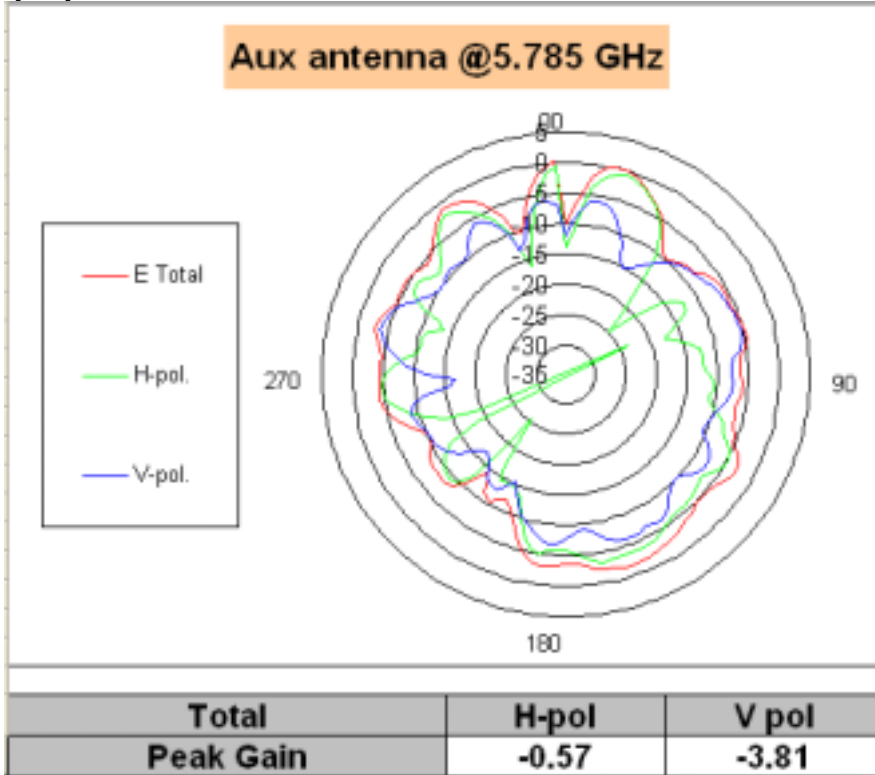
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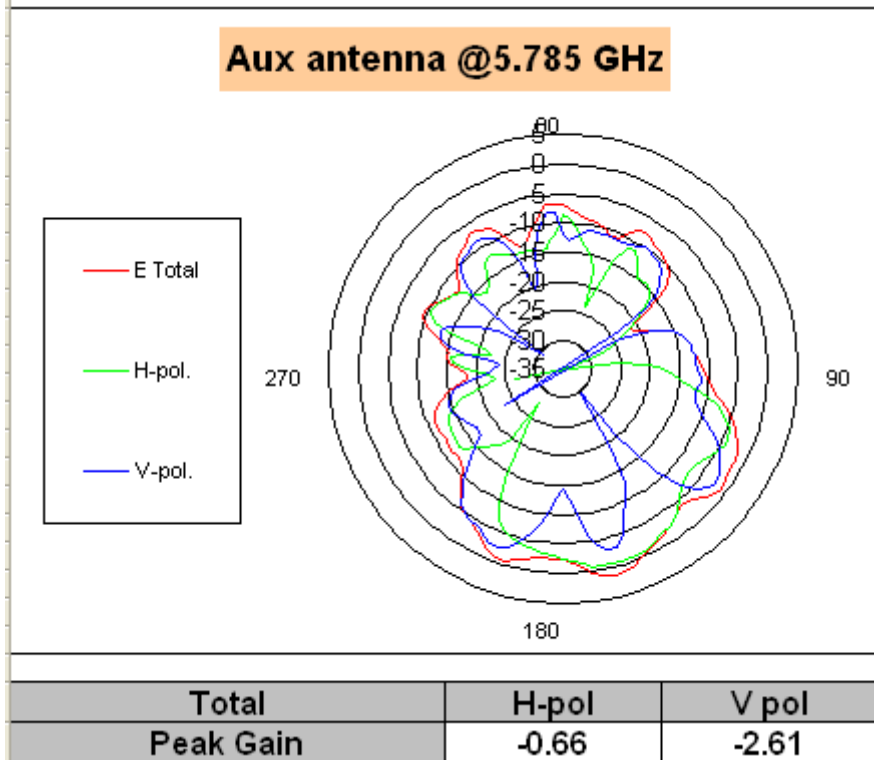
Total	H-pol	V pol
Peak Gain	2.10	0.60

Tx2 antenna: 5785 MHz

Laptop Mode:

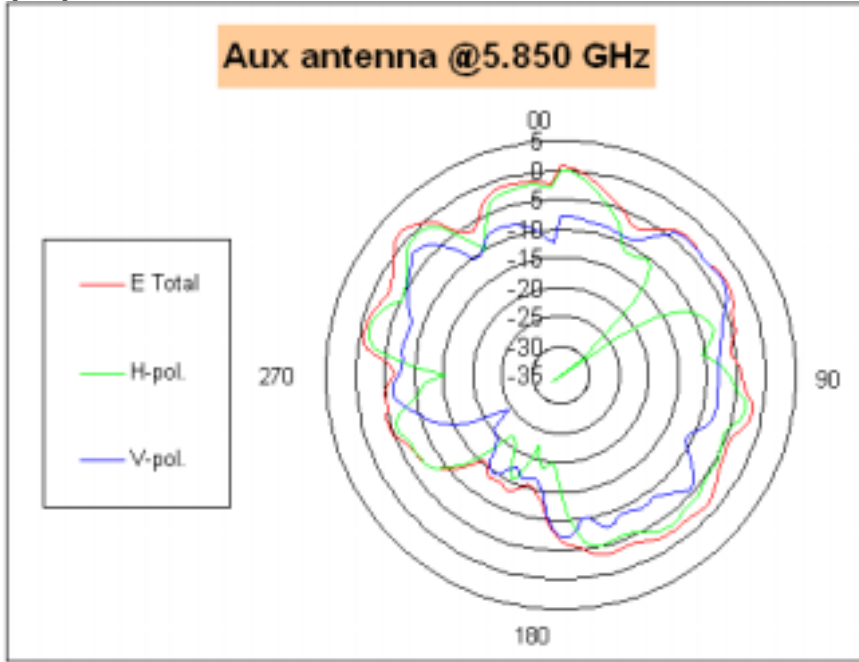


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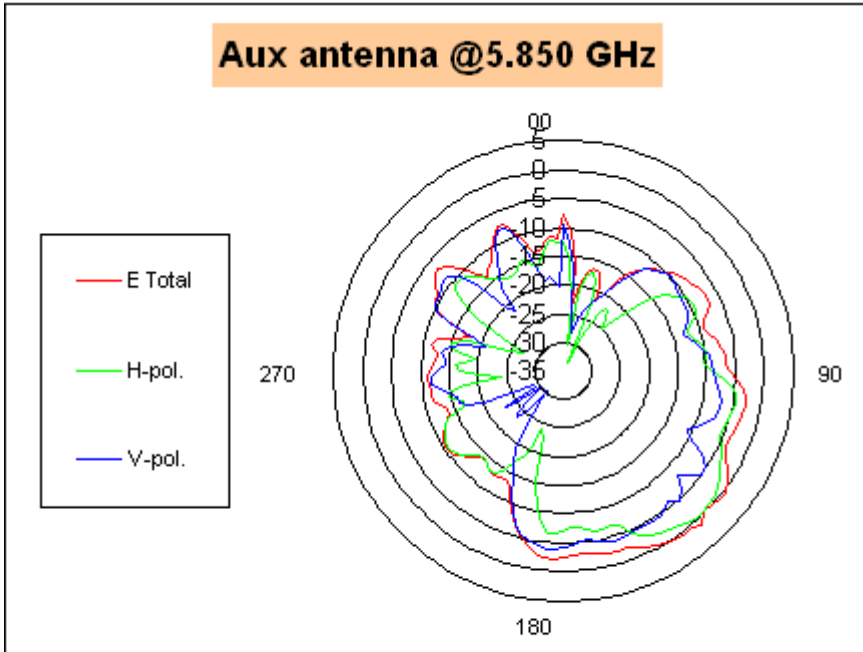
Tx2 antenna: 5850 MHz

Laptop Mode:



	H-pol	V pol
Peak Gain	-0.11	-2.55

Tablet Mode:



	H-pol	V pol
Peak Gain	-0.59	-4.13

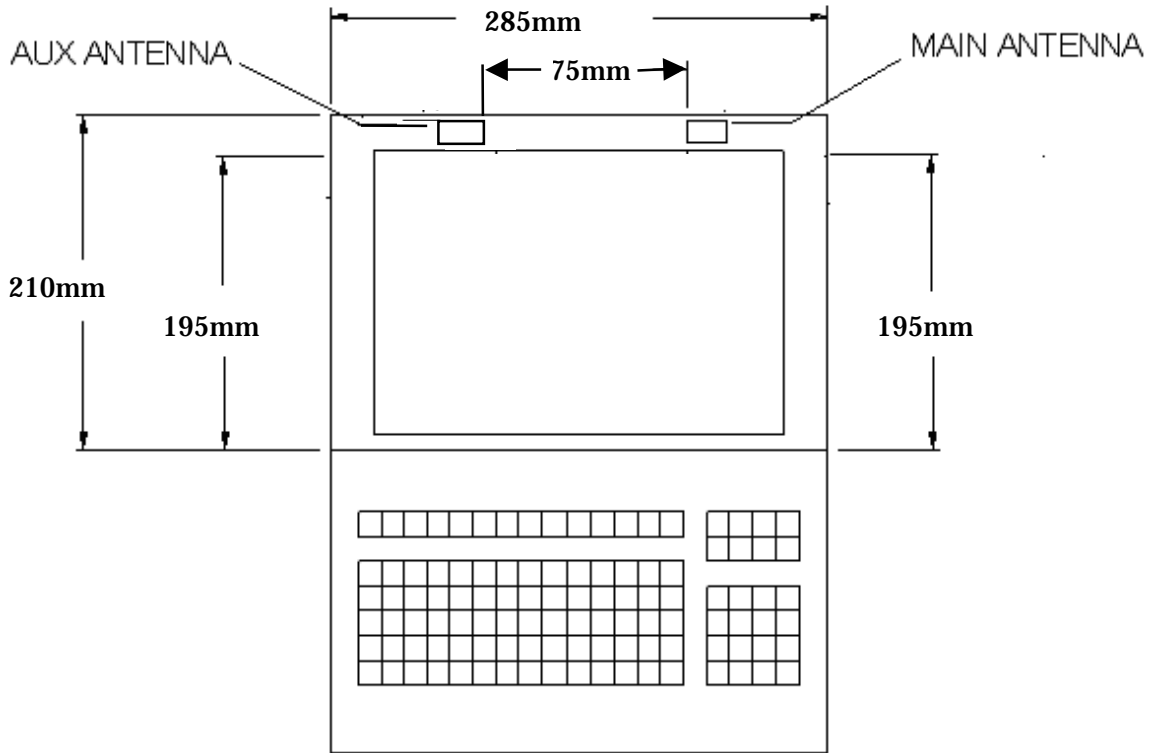
Section 4. Host Platform Information

OEM / ODM Host platform: (XXXXXXX) platform correlated to antenna data

Rating Label Photo:

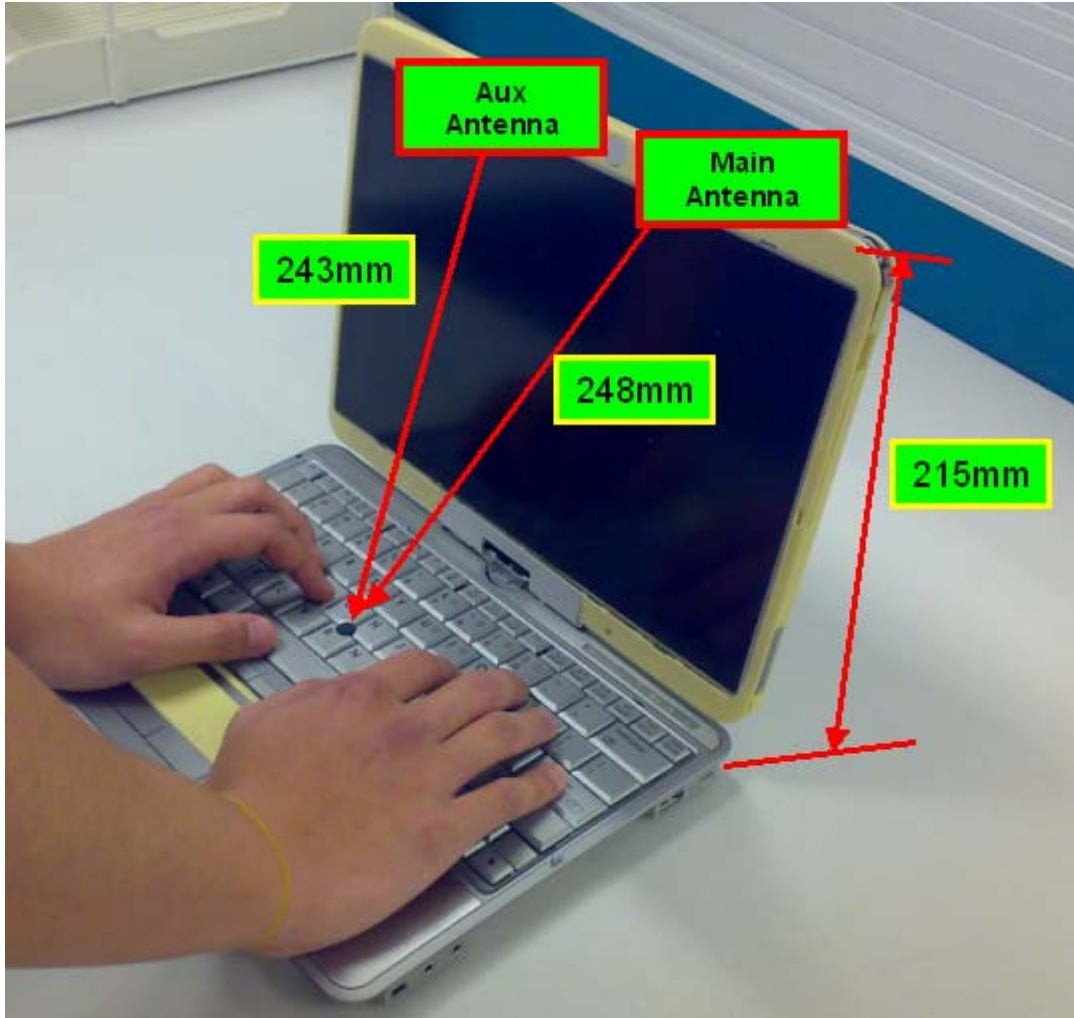
Section 5. Antenna Host Platform Location Information

Include a **dimensioned photo or dimensioned drawing** of Tx1, Tx2 and Tx3 antenna placements. (Not applicable for receive-only antenna e.g. Rx3 for 4965AGN)



Section 6. Antenna dimensional information for SAR evaluation

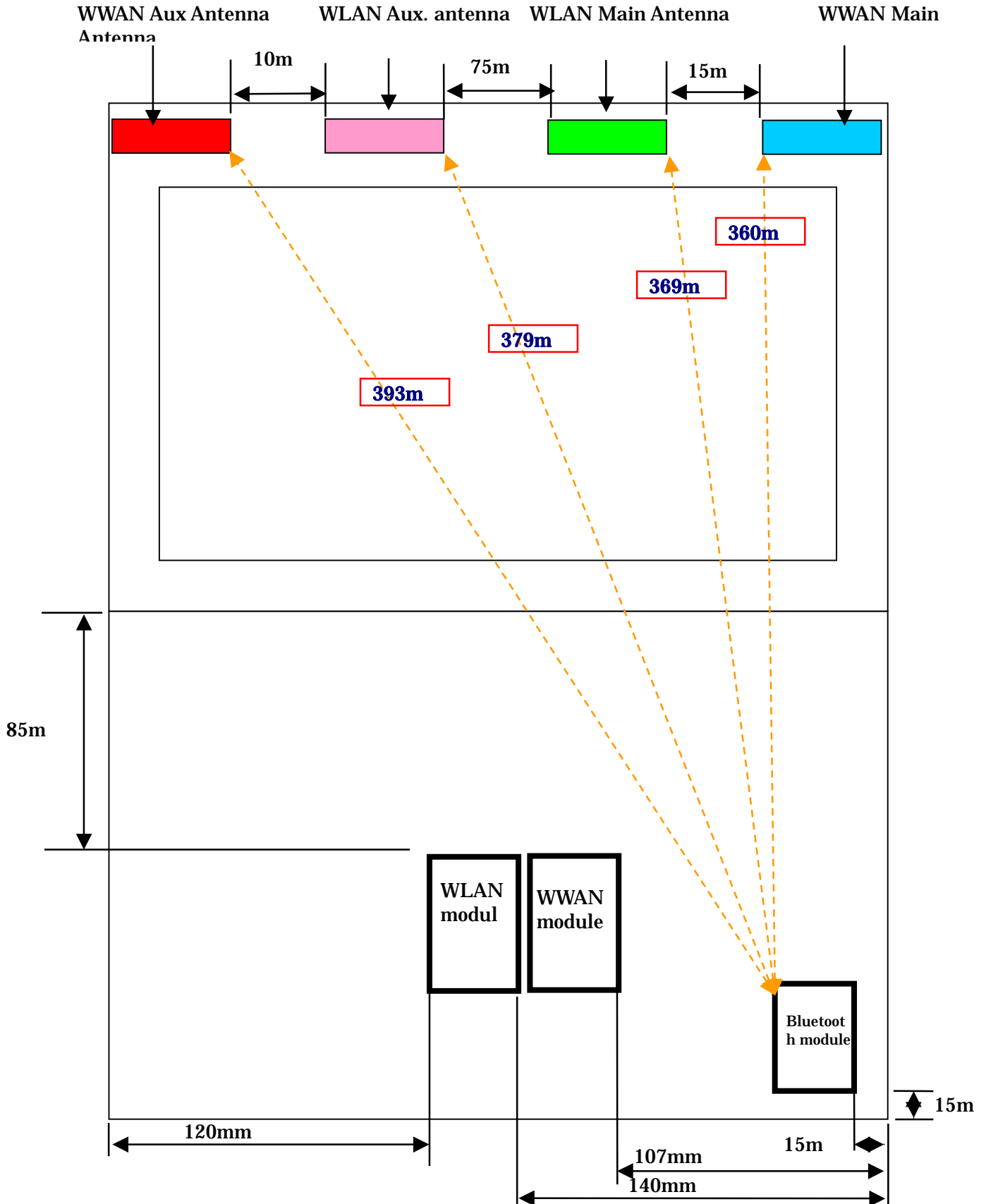
Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between the transmit antennas and the user (excluding hands, wrist, feet, lap/ thigh, and ankle)



Section 7. Diagram Example of Co-Location Antenna Separation

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between WLAN antenna and 2nd radiator transmit antenna.

(Note: Due to the evolving rules regarding co-location, each platform will need to be reviewed on a case by case basis)



Section 8. Local representative contact information

Local representative contact information is required for regulatory support for target countries below.

	Local company name	Contact name	Phone number	FAX Number	e-Mail Address	Notes
Argentina						
Brazil						
Indonesia						
Israel						
Malaysia						
Mexico						
Singapore						Telecommunication Equipment Dealer License Required
South Africa						
USA, Canada						