

# Regulatory WWAN Antenna Information

(English Language Required for Intel Regulatory Review / Approval)

<b>Platform</b>	
Platform Owner	
Brand Name	Quanta
Model Name	UW2
ODM	Quanta Computer Inc.
Target Launch Date	(YYYY/ MM/ DD)
<b>Antenna</b>	
Brand Name	Quanta Computer Inc.
Part Number	<input checked="" type="checkbox"/> Tx1 Antenna: DQ6MLP10T00
	<input type="checkbox"/> Tx2 Antenna:
	<input type="checkbox"/> Tx3 (or Rx3) Antenna:
<b>Module</b>	
With WLAN Module	<input checked="" type="checkbox"/> Ericsson F3307GW KRD 131
(Check Box)	<input checked="" type="checkbox"/> Realtek RTL8191SE

## 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 3<sup>rd</sup> 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: DQ6MLP10T00) Tx1 antenna	Quanta Computer Inc	PIFA	(P/N: C88P129) 50 ohm Coaxial. length: 453 mm diameter: 1.37mm Connector: SPD	824-849 MHz -0.8 dBi (peak)	824-849 MHz -0.17 dBi (peak)	824-849 MHz 3.0 max	824-849 MHz -0.63 dBi (peak)
				880-915 MHz -1.1 dBi (peak)	880-915 MHz -0.43 dBi (peak)	880-915 MHz 3.0 max	880-915 MHz -0.67 dBi (peak)
				1710-1785 MHz 0.8 dBi (peak)	1710-1785 MHz 1.73 dBi (peak)	1710-1785 MHz 2.0 max	1710-1785 MHz -0.93 dBi (peak)
				1850-1910 MHz -2.1 dBi (peak)	1850-1910 MHz -1.17 dBi (peak)	1850-1910 MHz 2.0 max	1850-1910 MHz -0.93 dBi (peak)
				1920-1980 MHz -1.0 dBi (peak)	1920-1980 MHz -0.06 dBi (peak)	1920-1980 MHz 2.0 max	1920-1980 MHz -0.94 dBi (peak)

(P/N: DQ6MLP10T00) Tx1 antenna	Quanta Computer Inc	PIFA	(P/N: SGX0003) 50 ohm Coaxial. length: 283 mm diameter: 1.13 mm Connector: SGX	2400-2500MHz -1.1 dBi (peak)	2400-2500MHz -0.12 dBi (peak)	2400-2500MHz 2.0 max	2400-2500MHz -0.98 dBi (peak)
(P/N: DQ6MLP10T00) Tx2 antenna	Quanta Computer Inc	PIFA	(P/N: SGX0003) 50 ohm Coaxial. length: 407 mm diameter: 1.13 mm Connector: SGX	2400-2500MHz 0.5 dBi (peak)	2400-2500MHz 2.34 dBi (peak)	2400-2500MHz 2.0 max	2400-2500MHz -1.84 dBi (peak)

### NOTE:

(\*) If Rx2/Rx3 only (2<sup>nd</sup> or 3<sup>rd</sup> antenna receives only, e.g. for 512 family & 4965AGN) then the information marked with \* is not required

**Antenna Peak Gain Table:**

WWAN	Tx1 antenna	
	Horizontal (dBi)	Vertical (dBi)
824	-2.6	-6.8
836	-1.6	-6.0
849	-0.8	-5.3
869	-0.7	-4.6
880	-1.4	-4.2
894	-1.2	-4.3
880	-1.4	-4.2
900	-1.1	-4.4
915	-1.4	-4.6
925	-1.5	-4.9
940	-2.2	-5.2
960	-3.0	-5.4
1710	0.8	-0.3
1750	0.4	-1.3
1785	-0.1	-0.9
1805	-0.8	-1.4
1840	-1.8	-2.9
1880	-3.1	-3.6
1850	-2.1	-3.0
1880	-3.1	-3.6
1910	-2.5	-4.0
1930	-3.2	-4.0
1960	-3.7	-1.7
1990	-4.6	-1.5
1920	-2.8	-4.2
1950	-4.1	-2.8
1980	-4.0	-1.0
2110	-5.8	-0.7
2140	-6.0	-1.4
2170	-5.7	-2.4

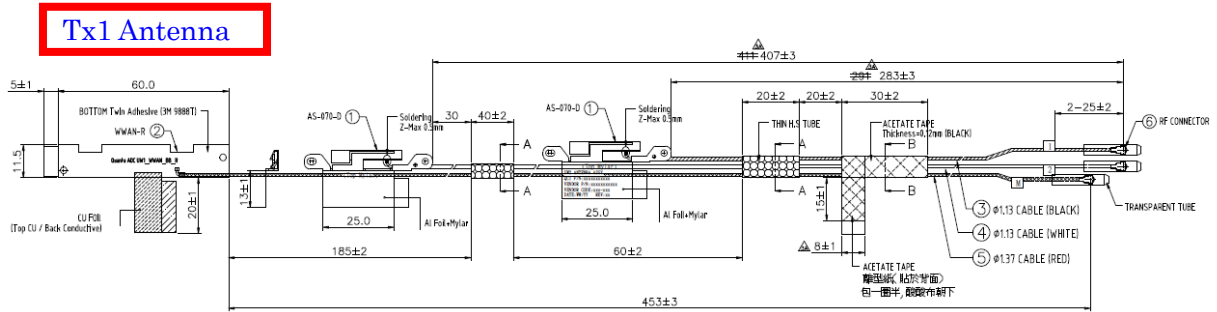
WLAN	Tx1 antenna		Tx2 (or Rx2) Antenna	
	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
2400	-1.2	-1.2	-1.1	0.4
2450	-1.1	-2.6	-0.2	0.5
2500	-1.3	-2.1	-1.0	-0.5

- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/V
- If Rx2 only (2<sup>nd</sup> antenna receives only, e.g. for 512 family) then the information is not required for Rx2.
- If Rx3 only (3<sup>rd</sup> 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:

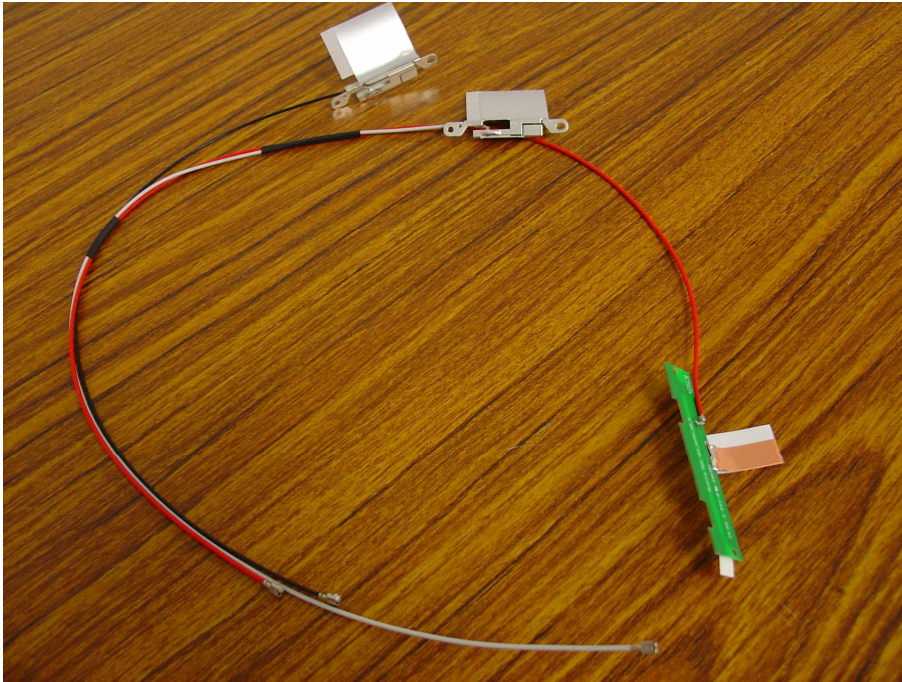


### Tx1 Antenna Photo:



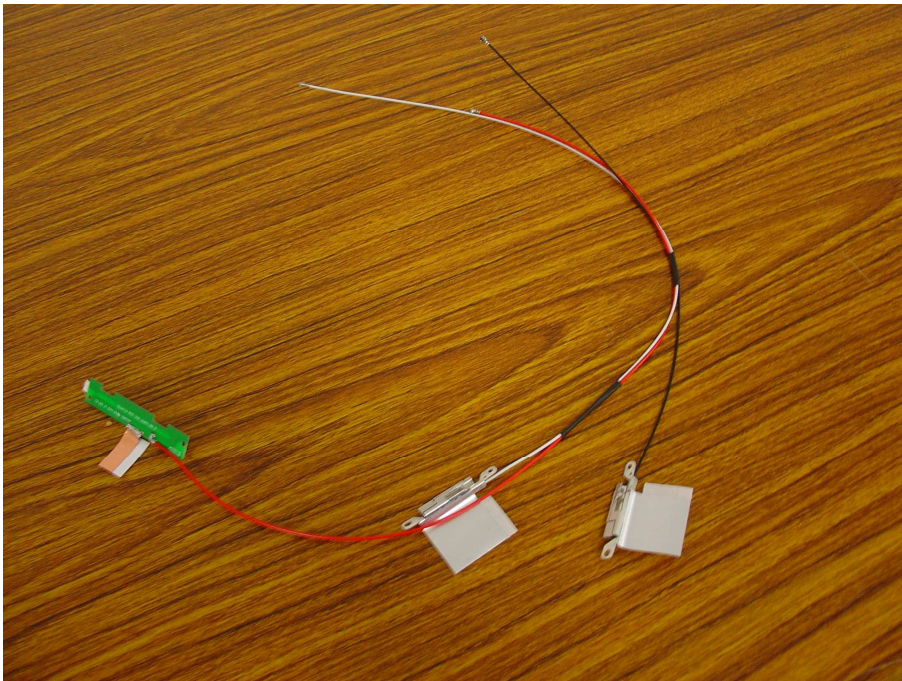
Include front view photo of all antenna here.

Antenna Manufacturer: Quanta Computer Inc.  
Antenna Part Number: DQ6MLP10T00 (Tx1)



Include back view photo of all antenna here.

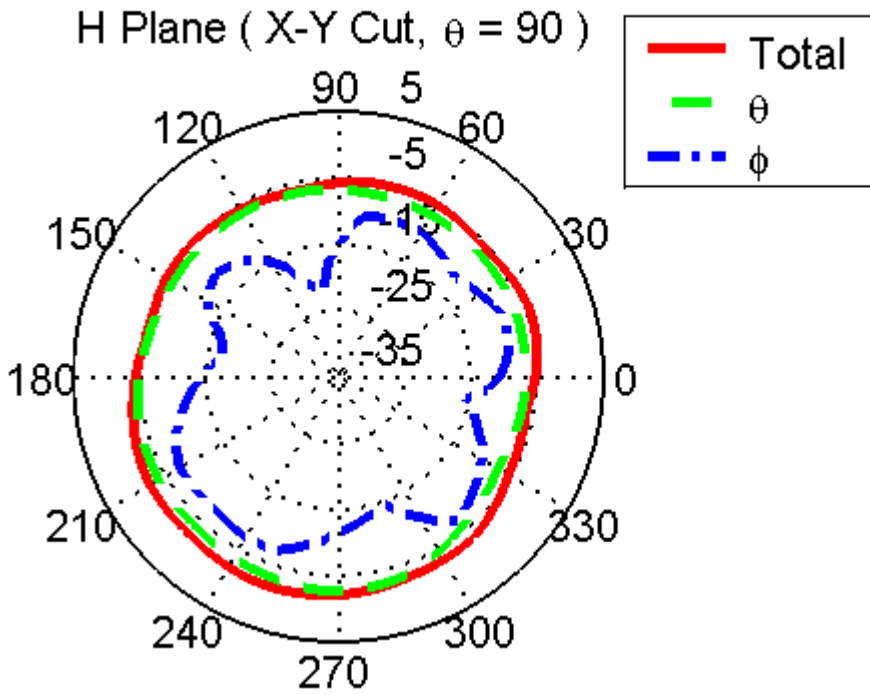
Antenna Manufacturer: Quanta Computer Inc.  
Antenna Part Number: DQ6MLP10T00 (Tx1).



## Section 3. Radiation characteristics of antennae Loaded in Host Platform

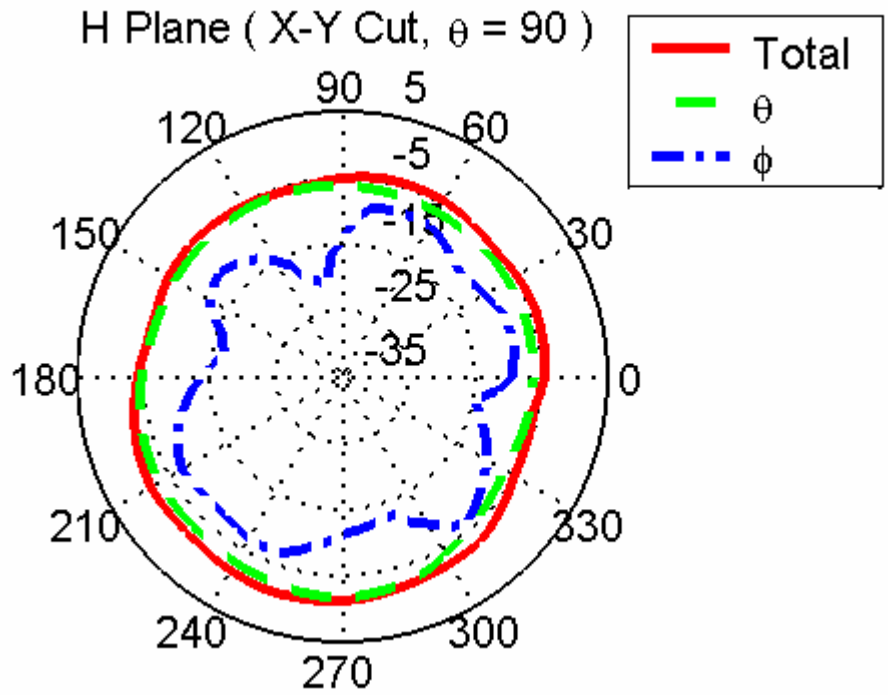
### 824-894 MHz radiation characteristic

Tx1 antenna: 824 MHz



Center Frequency	<b>824 MHz</b>
Horizontal (dBi) peak	<b>-2.6</b>
Vertical (dBi) peak	<b>-6.8</b>

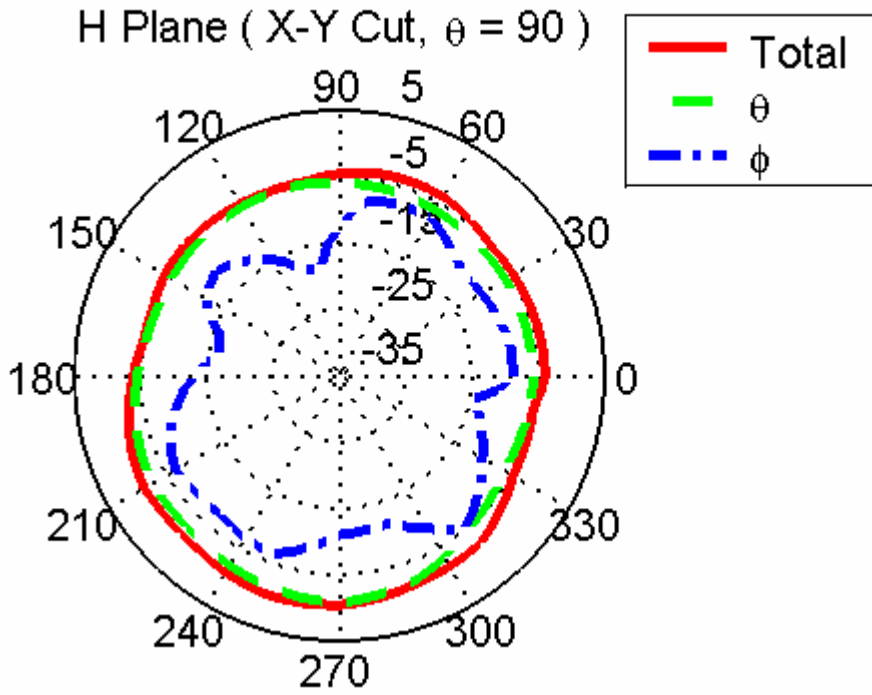
**Tx1 antenna: 836 MHz**



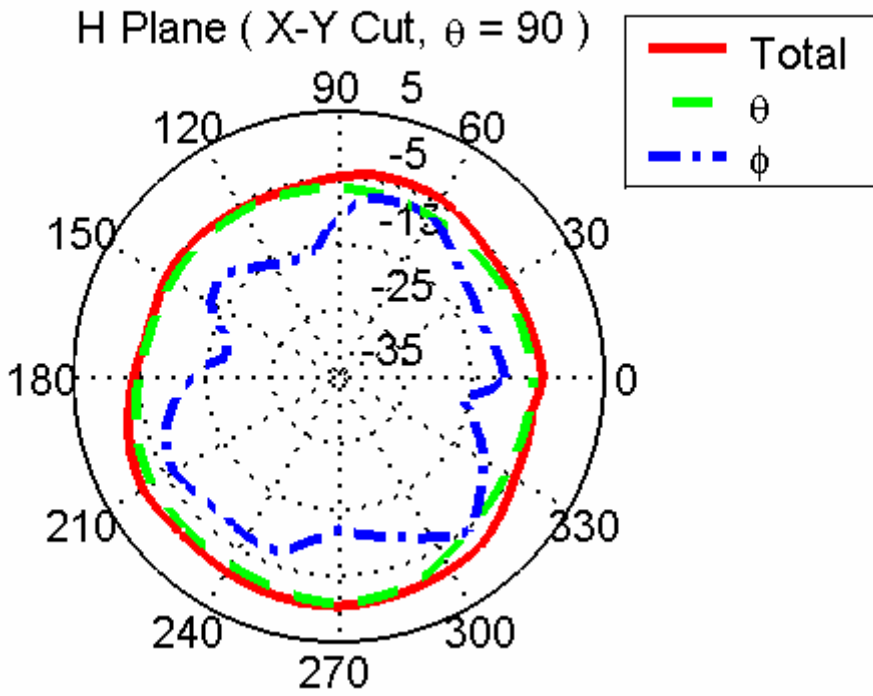
Center Frequency	<b>836 MHz</b>
Horizontal (dBi) peak	-1.6
Vertical (dBi) peak	-6.0



**Tx1 antenna: 849 MHz**

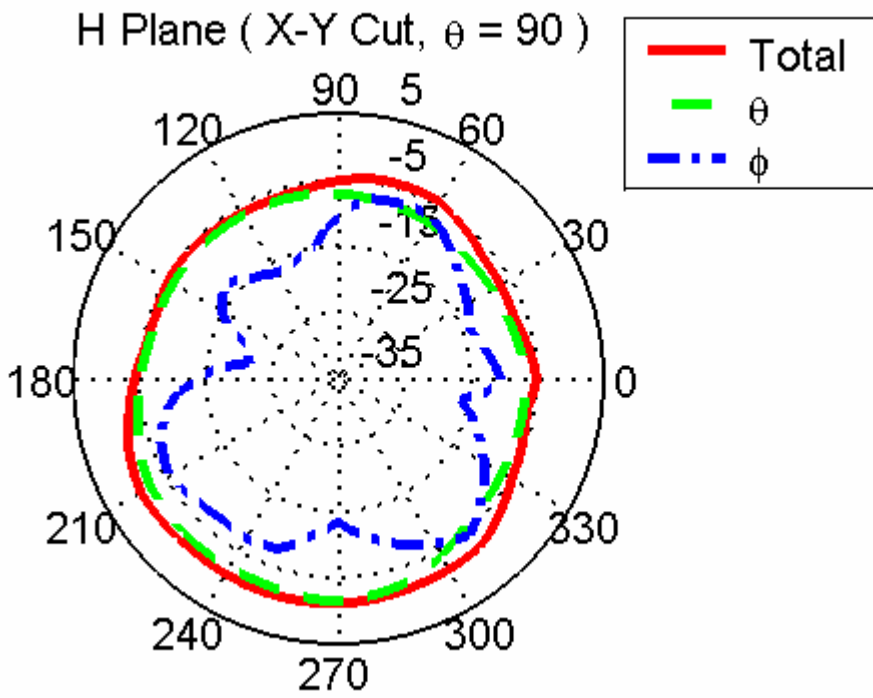


Center Frequency	<b>849 MHz</b>
Horizontal (dBi) peak	-0.8
Vertical (dBi) peak	-5.3



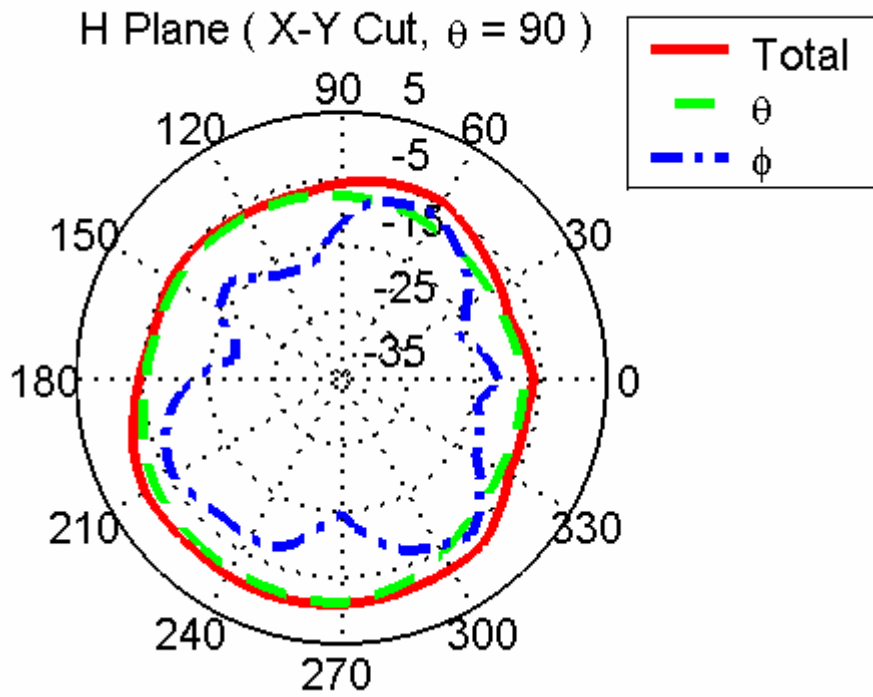
Center Frequency	<b>869 MHz</b>
Horizontal (dBi) peak	-0.7
Vertical (dBi) peak	-4.6

**Tx1 antenna: 880 MHz**



Center Frequency	<b>880 MHz</b>
Horizontal (dBi) peak	-1.4
Vertical (dBi) peak	-4.2

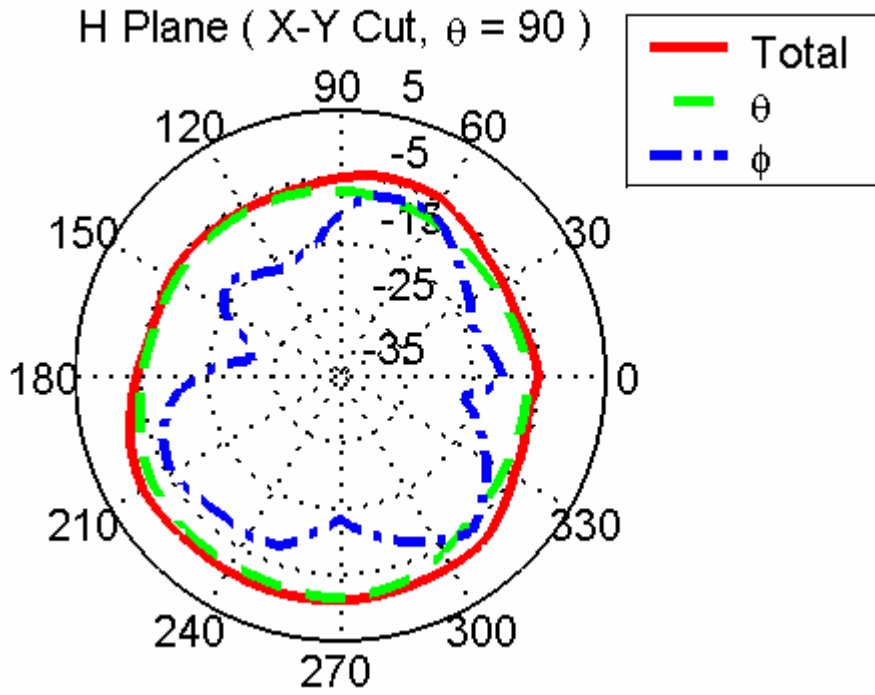
**Tx1 antenna: 894 MHz**



Center Frequency	<b>894 MHz</b>
Horizontal (dBi) peak	-1.2
Vertical (dBi) peak	-4.3

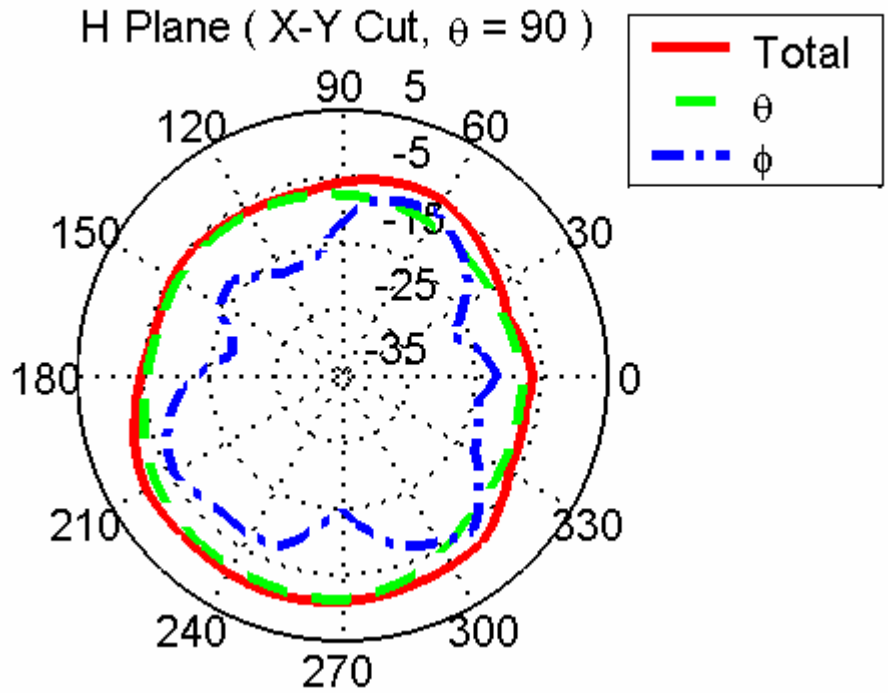
**880-950 MHz radiation characteristic**

**Tx1 antenna: 880 MHz**



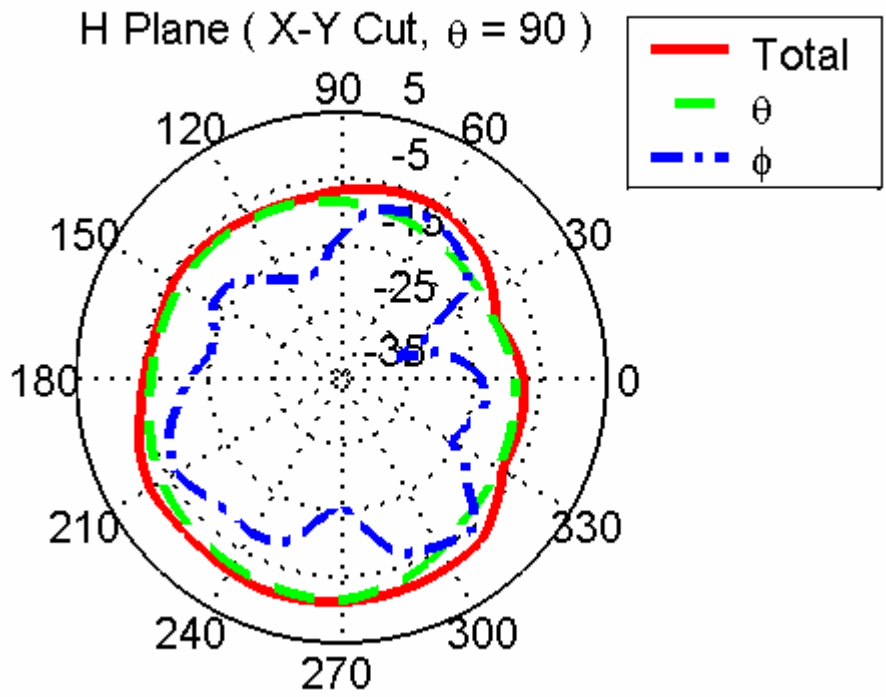
Center Frequency	<b>880 MHz</b>
Horizontal (dBi) peak	-1.4
Vertical (dBi) peak	-4.2

**Tx1 antenna: 900 MHz**



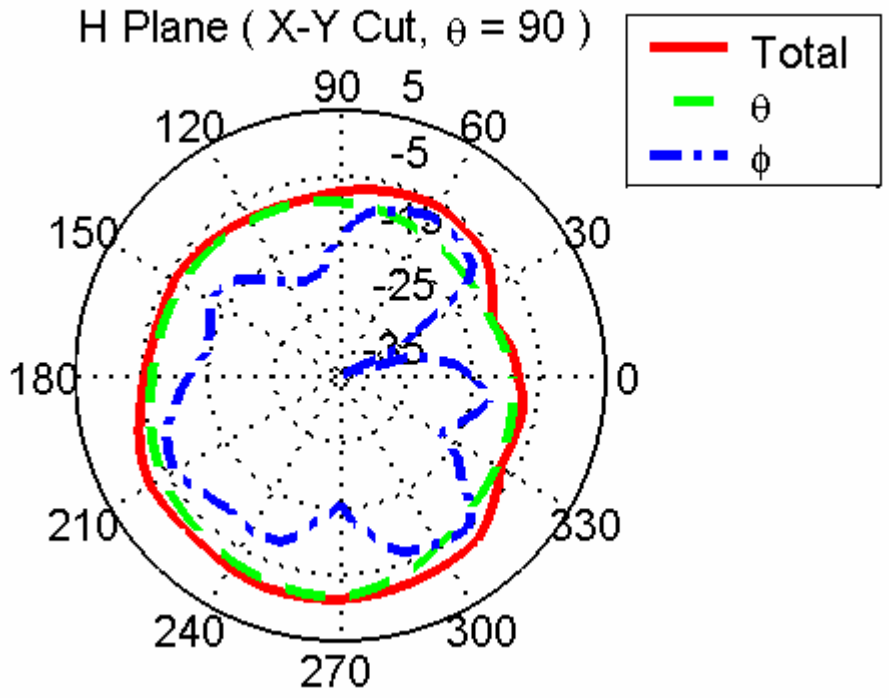
Center Frequency	<b>900 MHz</b>
Horizontal (dBi) peak	-1.1
Vertical (dBi) peak	-4.4

**Tx1 antenna: 915 MHz**



Center Frequency	<b>915 MHz</b>
Horizontal (dBi) peak	-1.1
Vertical (dBi) peak	-4.6

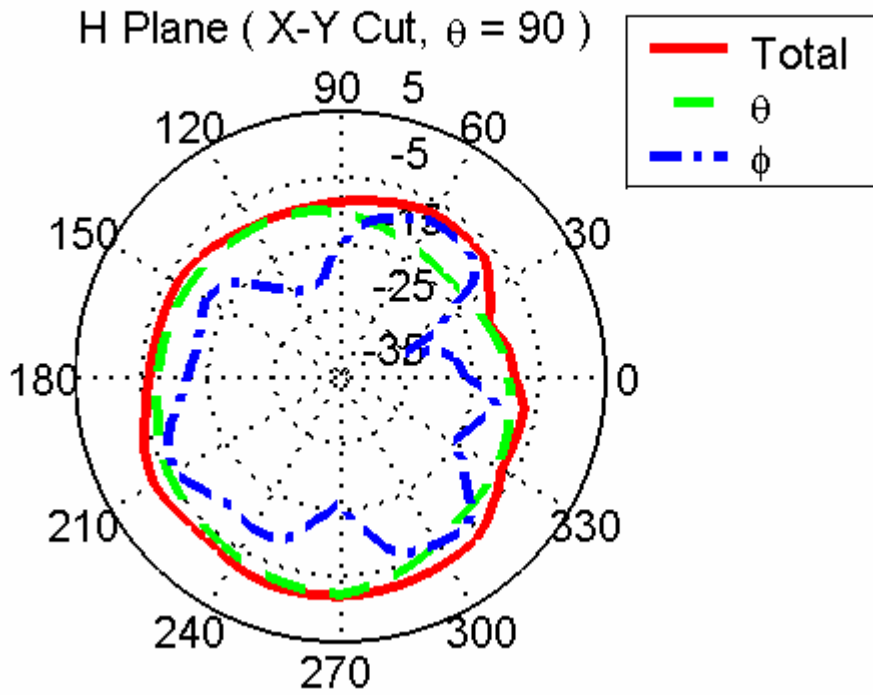
**Tx1 antenna: 925 MHz**



Center Frequency	<b>925 MHz</b>
Horizontal (dBi) peak	<b>-1.5</b>
Vertical (dBi) peak	<b>-4.9</b>

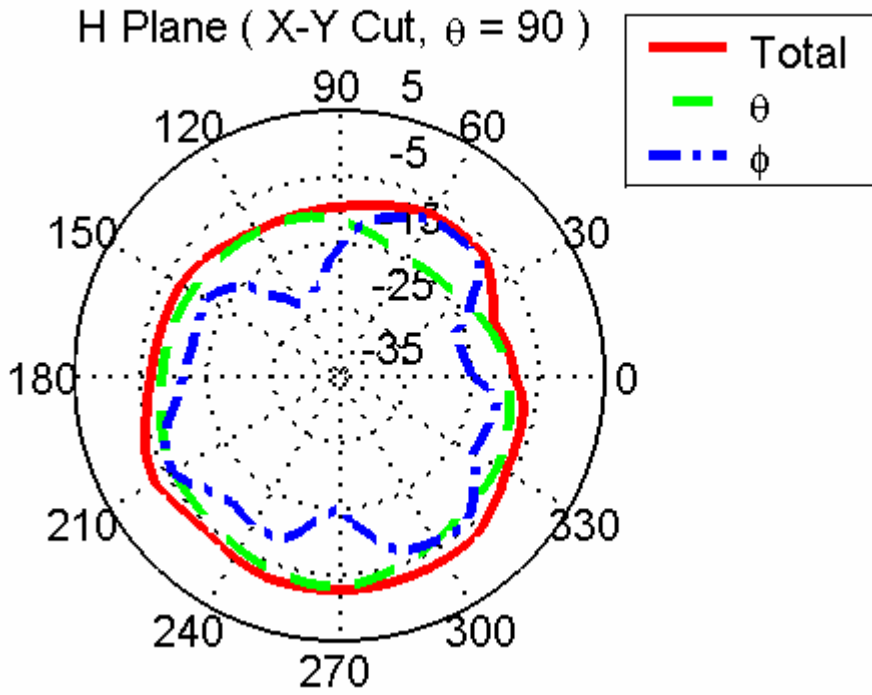


**Tx1 antenna: 940 MHz**



Center Frequency	<b>940 MHz</b>
Horizontal (dBi) peak	-2.2
Vertical (dBi) peak	-5.2

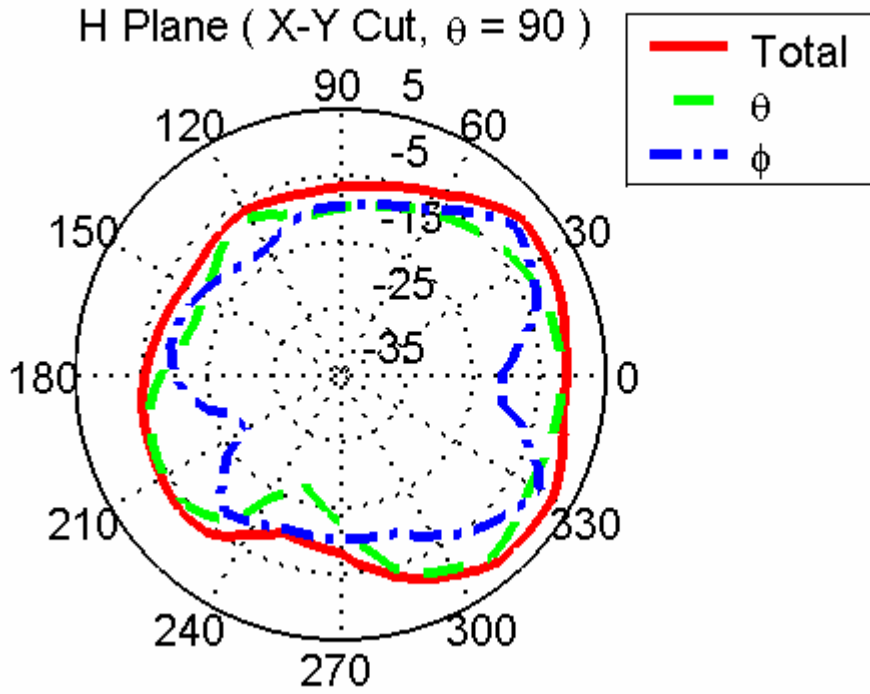
**Tx1 antenna: 960 MHz**



Center Frequency	<b>960 MHz</b>
Horizontal (dBi) peak	<b>-3.0</b>
Vertical (dBi) peak	<b>-5.4</b>

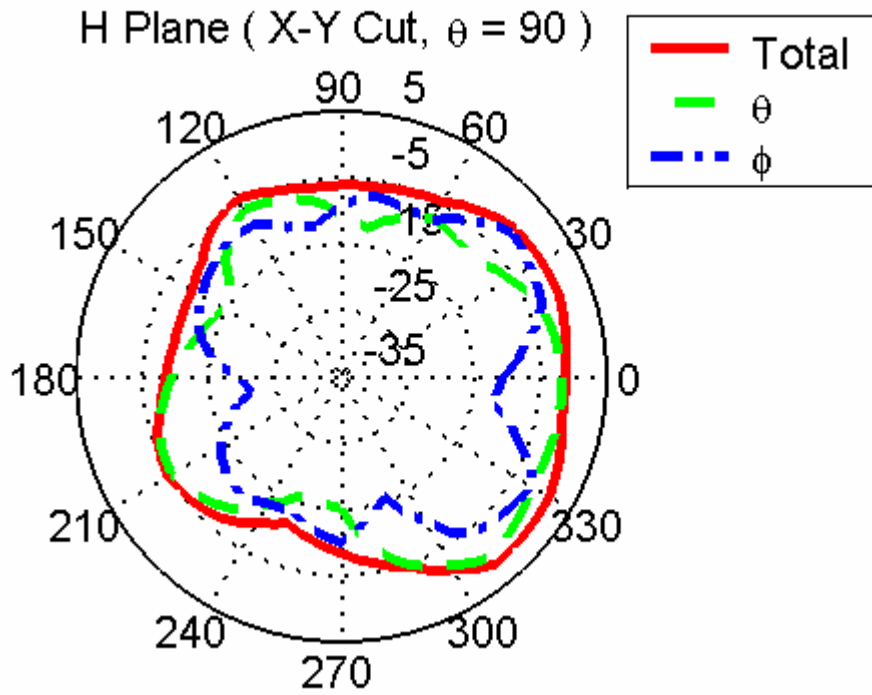
**1710-1880 MHz radiation characteristic**

**Tx1 antenna: 1710 MHz**



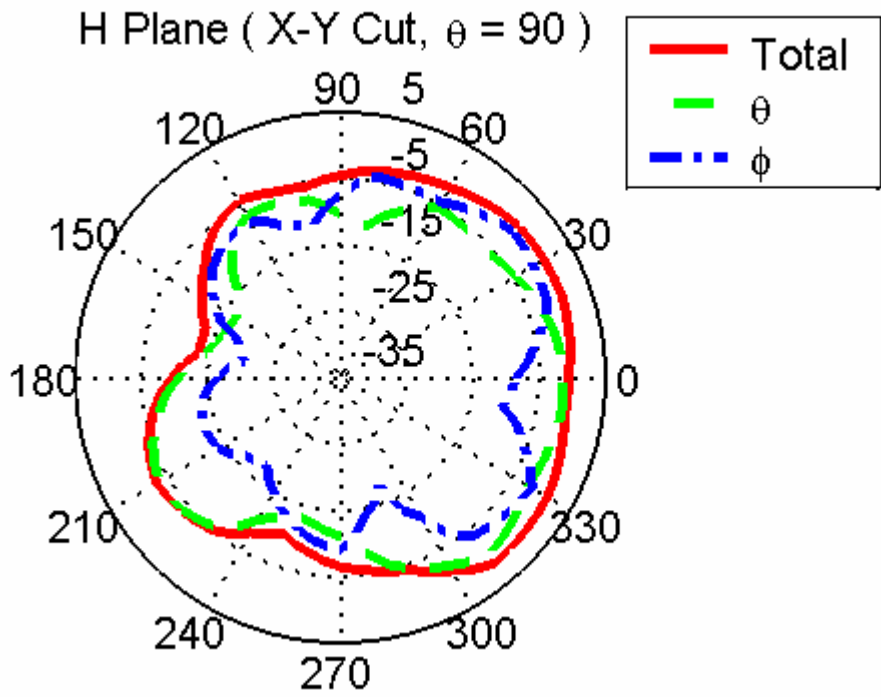
Center Frequency	<b>1710 MHz</b>
Horizontal (dBi) peak	0.8
Vertical (dBi) peak	-0.3

**Tx1 antenna: 1750 MHz**



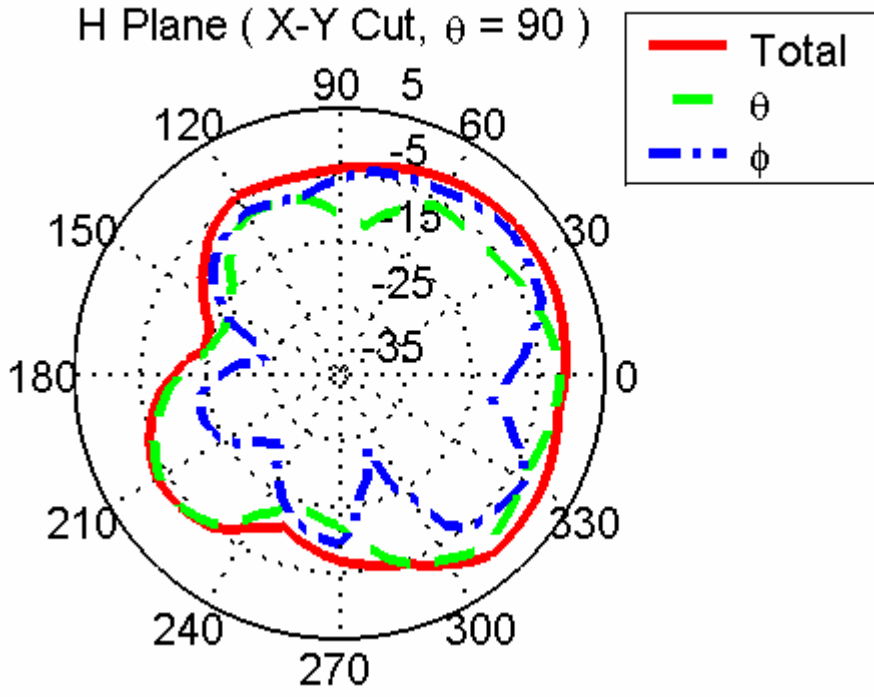
Center Frequency	<b>1750 MHz</b>
Horizontal (dBi) peak	0.4
Vertical (dBi) peak	-1.3

**Tx1 antenna: 1785 MHz**



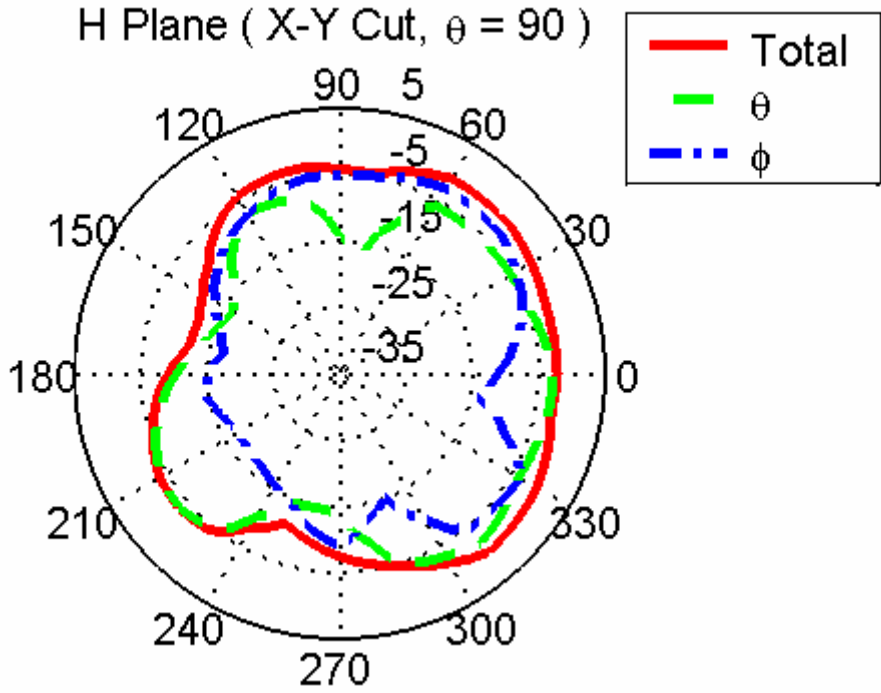
Center Frequency	<b>1785 MHz</b>
Horizontal (dBi) peak	-0.1
Vertical (dBi) peak	-0.9

**Tx1 antenna: 1805 MHz**



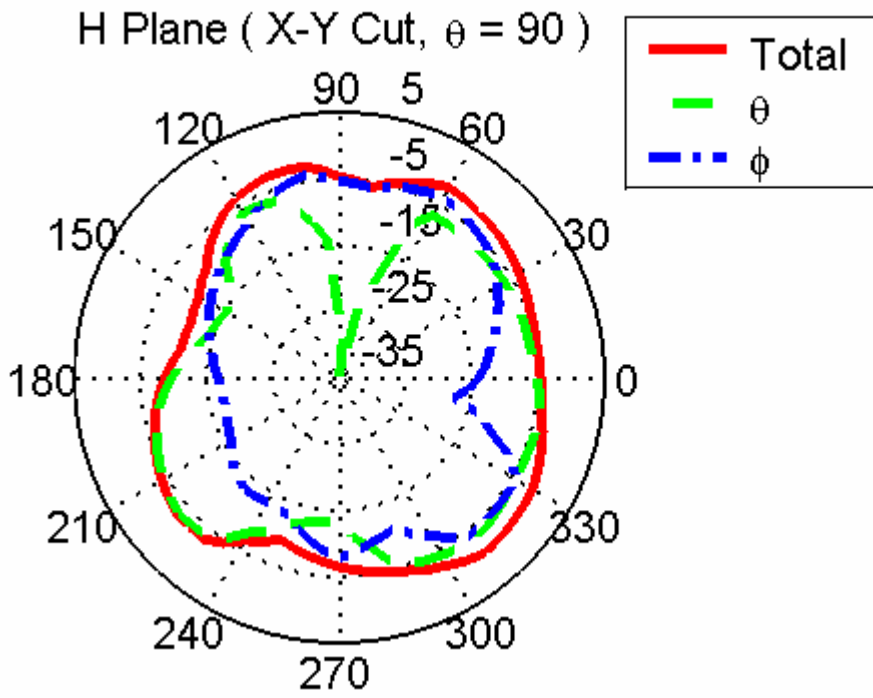
Center Frequency	<b>1805 MHz</b>
Horizontal (dBi) peak	-0.8
Vertical (dBi) peak	-1.4

**Tx1 antenna: 1840 MHz**



Center Frequency	<b>1840 MHz</b>
Horizontal (dBi) peak	<b>-1.8</b>
Vertical (dBi) peak	<b>-2.9</b>

**Tx1 antenna: 1880 MHz**

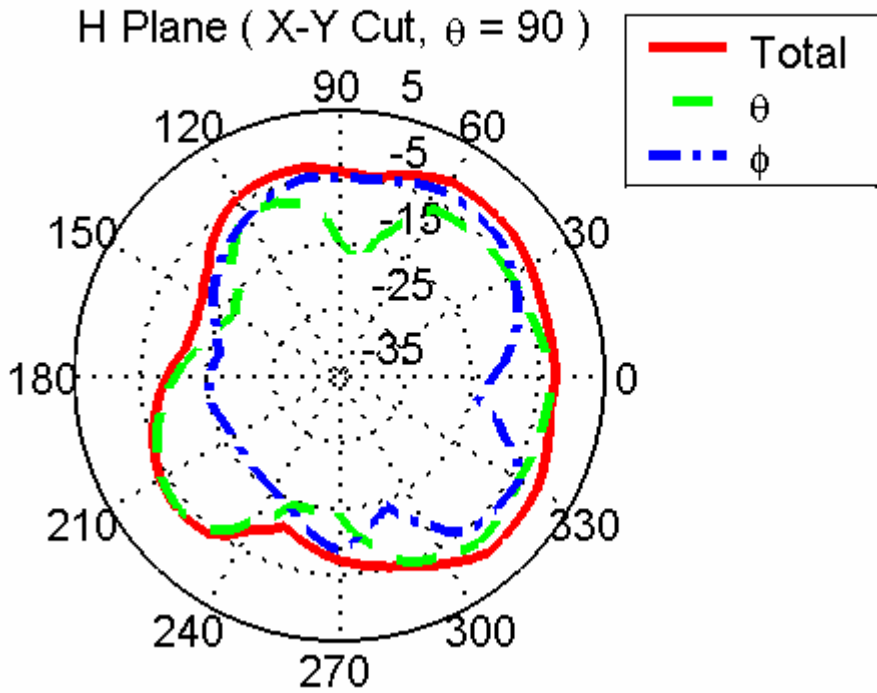


Center Frequency	<b>1880 MHz</b>
Horizontal (dBi) peak	<b>-3.1</b>
Vertical (dBi) peak	<b>-3.6</b>



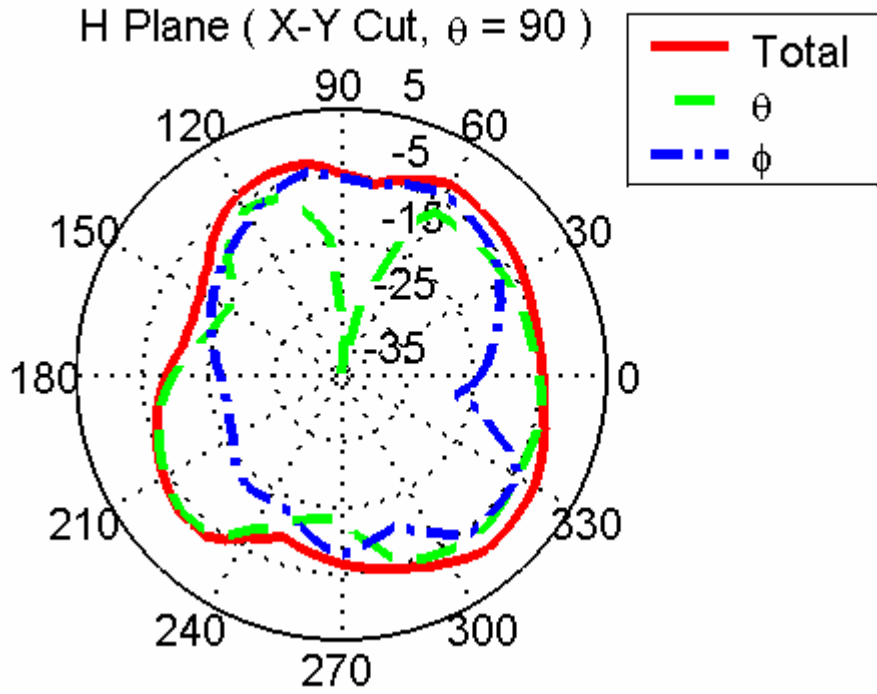
**1850-1990 MHz radiation characteristic**

**Tx1 antenna: 1850 MHz**



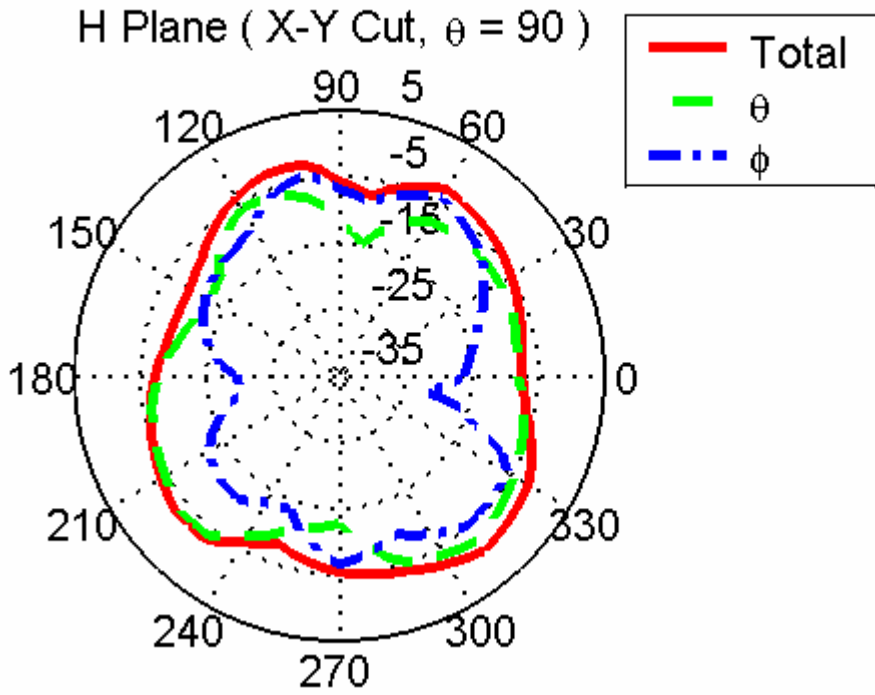
Center Frequency	<b>1850 MHz</b>
Horizontal (dBi) peak	-2.1
Vertical (dBi) peak	-3.0

**Tx1 antenna: 1880 MHz**



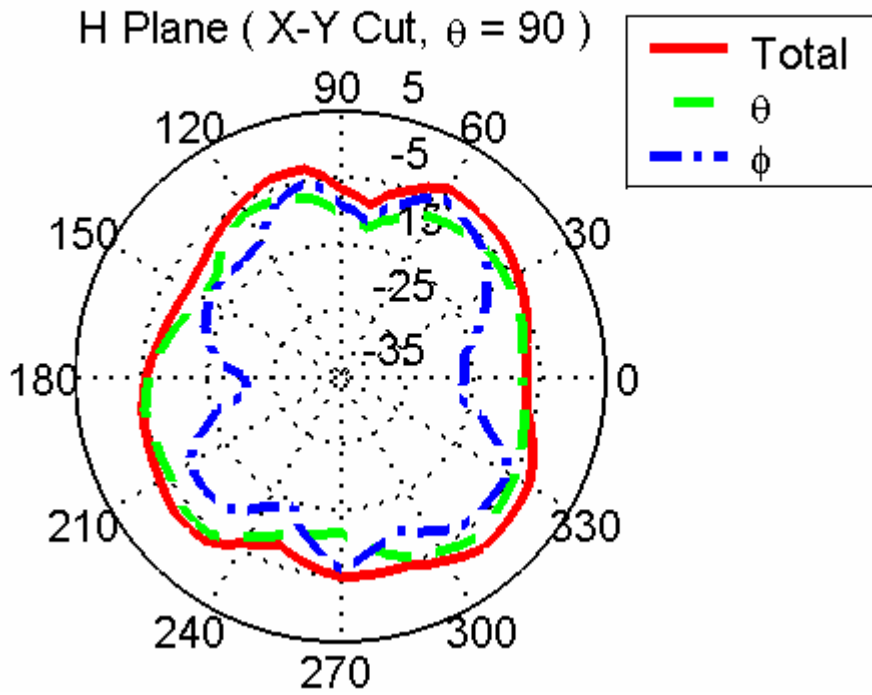
Center Frequency	<b>1880 MHz</b>
Horizontal (dBi) peak	<b>-3.1</b>
Vertical (dBi) peak	<b>-3.6</b>

**Tx1 antenna: 1910 MHz**



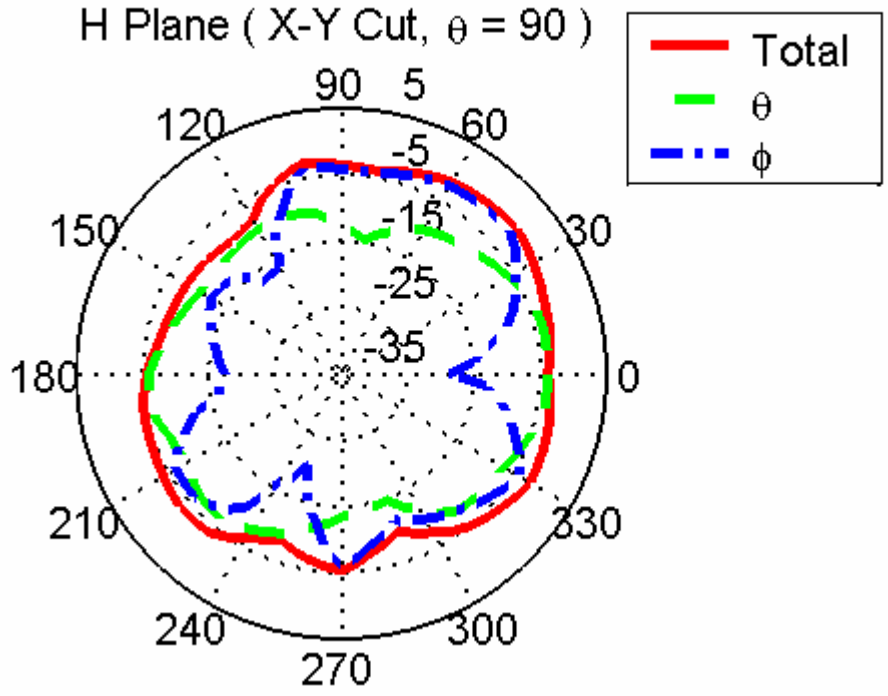
Center Frequency	<b>1910 MHz</b>
Horizontal (dBi) peak	-2.5
Vertical (dBi) peak	-4.0

**Tx1 antenna: 1930 MHz**



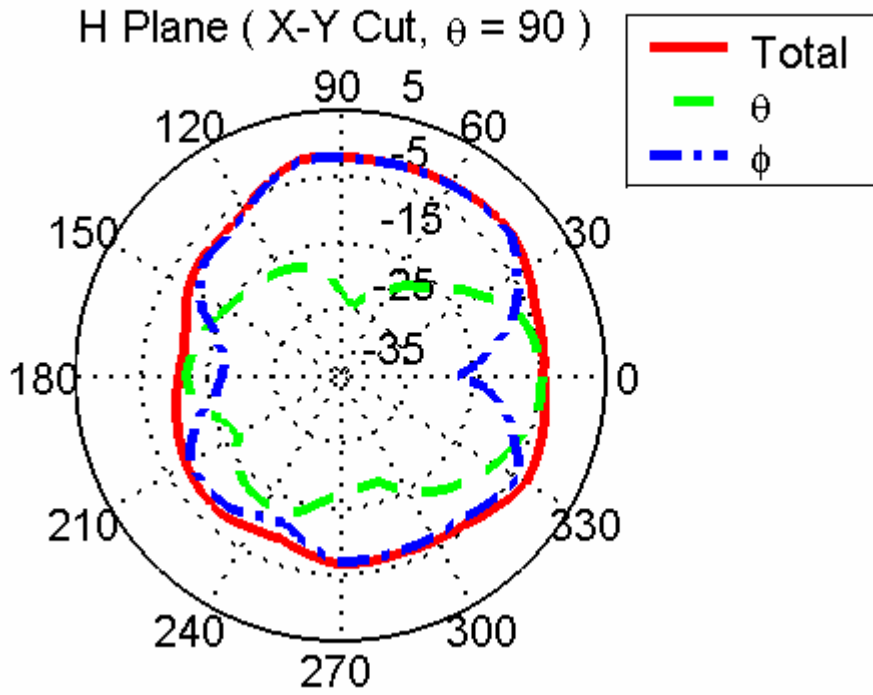
Center Frequency	<b>1930 MHz</b>
Horizontal (dBi) peak	-3.2
Vertical (dBi) peak	-4.0

**Tx1 antenna: 1960 MHz**



Center Frequency	<b>1960 MHz</b>
Horizontal (dBi) peak	<b>-3.7</b>
Vertical (dBi) peak	<b>-1.7</b>

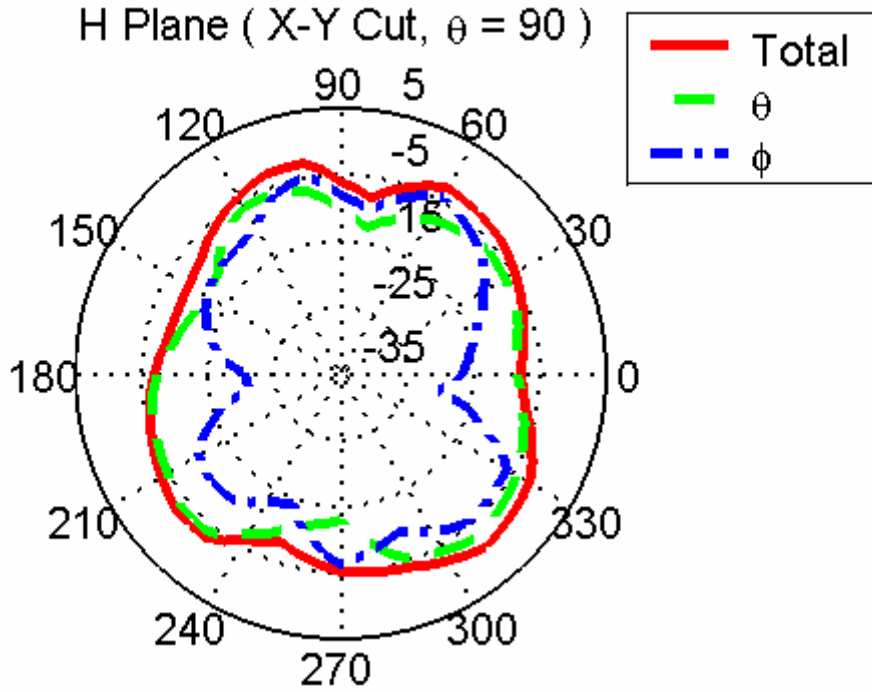
**Tx1 antenna: 1990 MHz**



Center Frequency	<b>1990 MHz</b>
Horizontal (dBi) peak	-4.6
Vertical (dBi) peak	-1.5

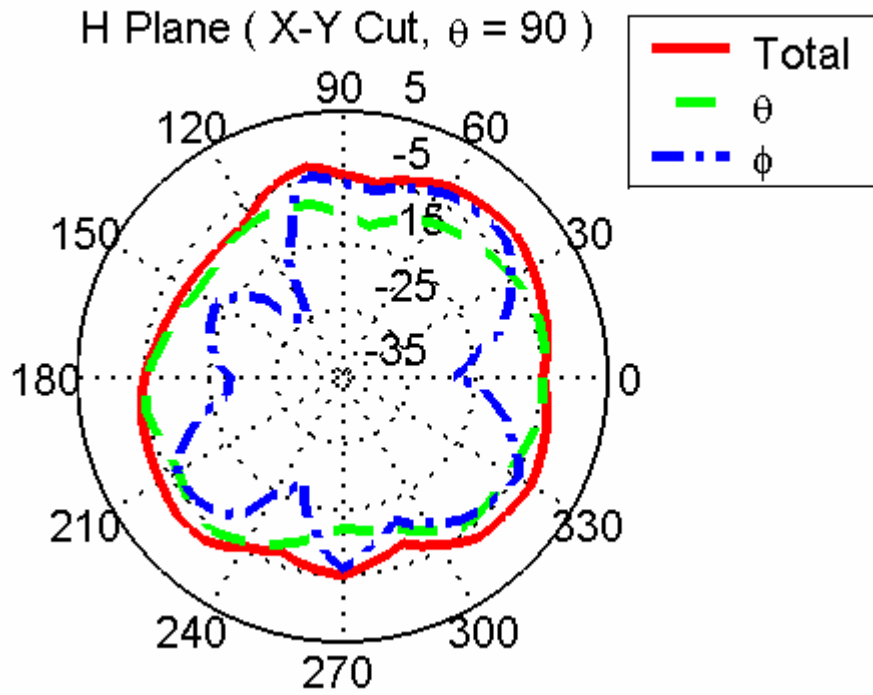
**1920-2170 MHz radiation characteristic**

**Tx1 antenna: 1920 MHz**



Center Frequency	<b>1920 MHz</b>
Horizontal (dBi) peak	-2.8
Vertical (dBi) peak	-4.2

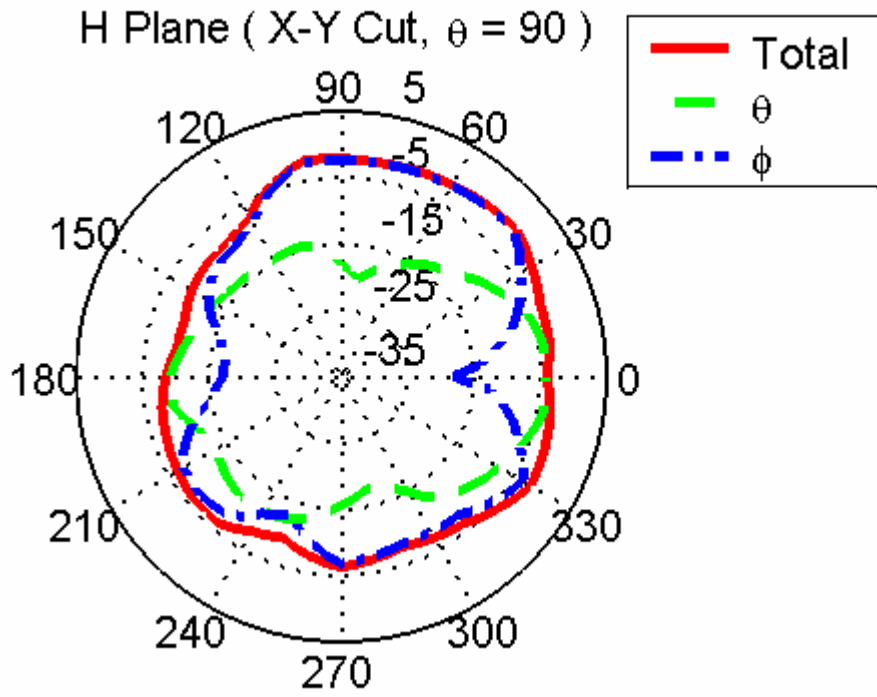
**Tx1 antenna: 1950 MHz**



Center Frequency	<b>1950 MHz</b>
Horizontal (dBi) peak	-4.1
Vertical (dBi) peak	-2.8

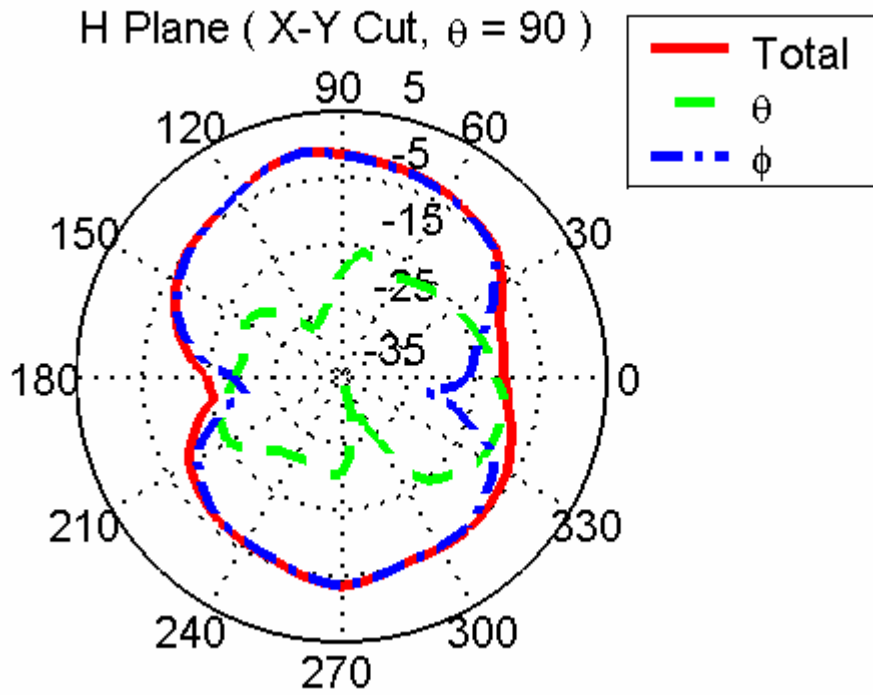


**Tx1 antenna: 1980 MHz**



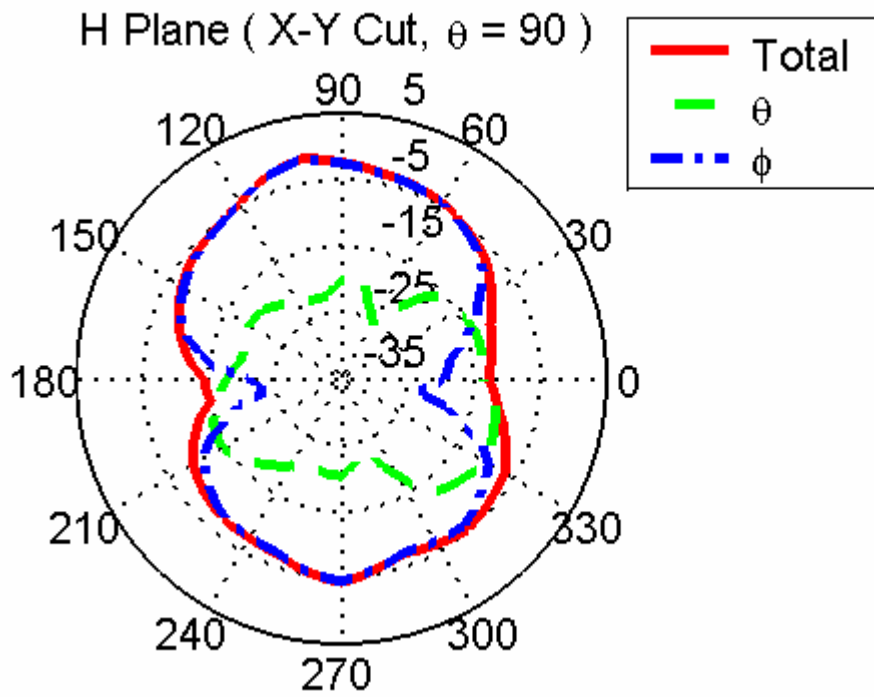
Center Frequency	<b>1980 MHz</b>
Horizontal (dBi) peak	-4.0
Vertical (dBi) peak	-1.0

**Tx1 antenna: 2110 MHz**



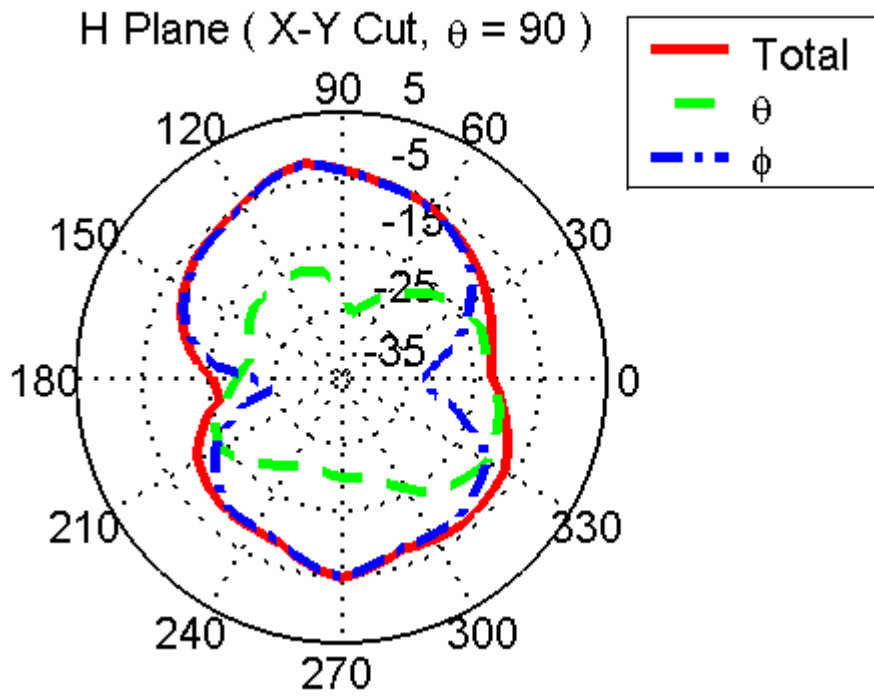
Center Frequency	<b>2110 MHz</b>
Horizontal (dBi) peak	-5.8
Vertical (dBi) peak	-0.7

**Tx1 antenna: 2140 MHz**



Center Frequency	<b>2140 MHz</b>
Horizontal (dBi) peak	-6.0
Vertical (dBi) peak	-1.4

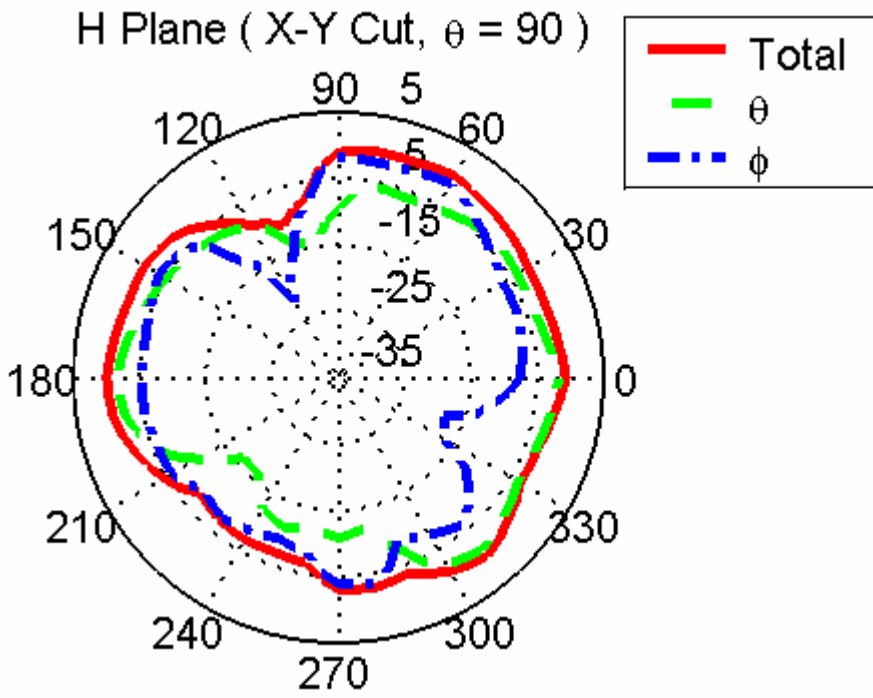
**Tx1 antenna: 2170 MHz**



Center Frequency	<b>2170 MHz</b>
Horizontal (dBi) peak	-5.7
Vertical (dBi) peak	-2.4

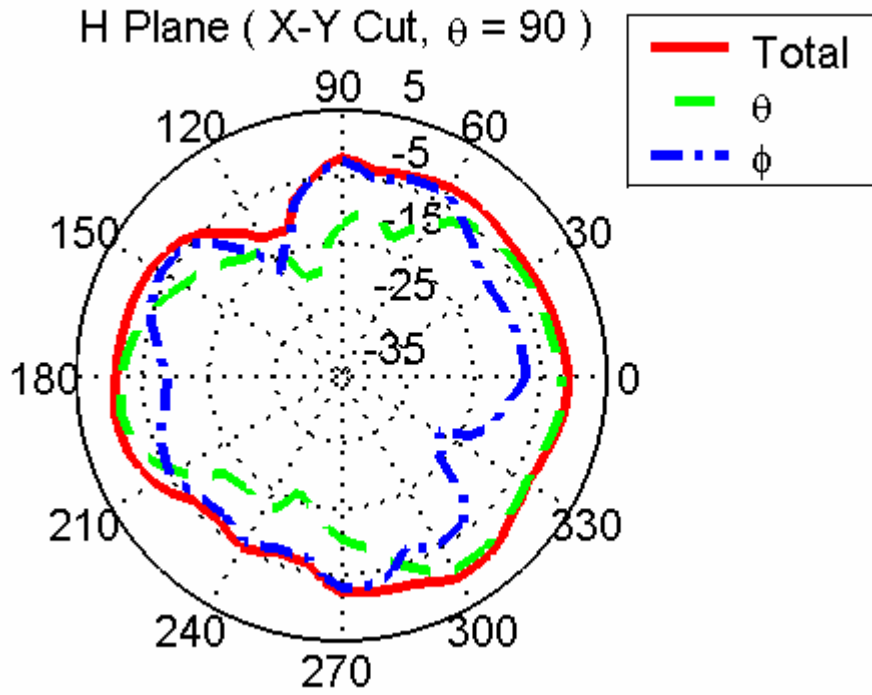
2400-2500MHz radiation characteristic

**Tx1 antenna: 2400 MHz**



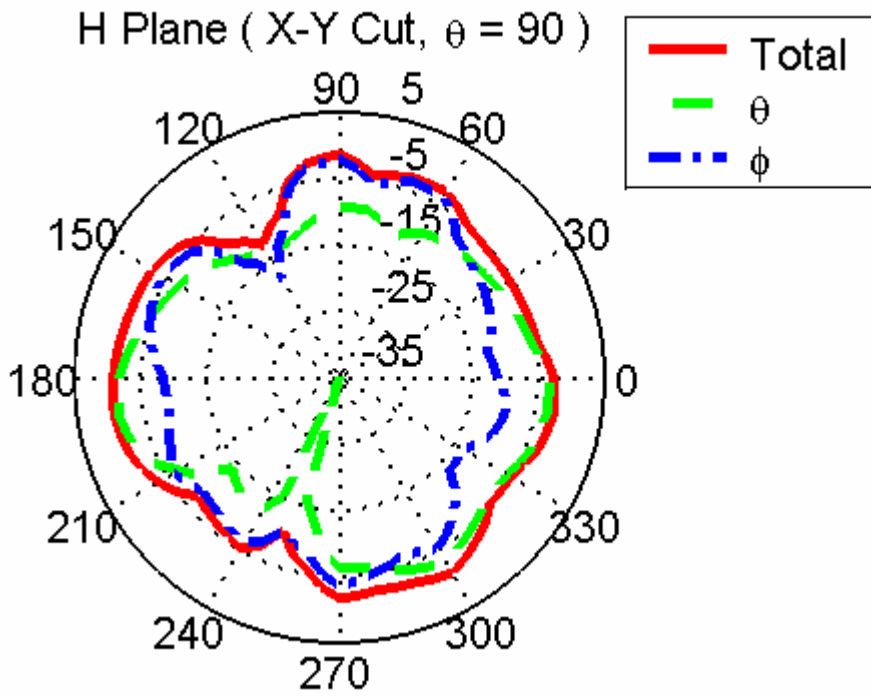
Center Frequency	<b>2400 MHz</b>
Horizontal (dBi) peak	-1.2
Vertical (dBi) peak	-1.2

**Tx1 antenna: 2450 MHz**



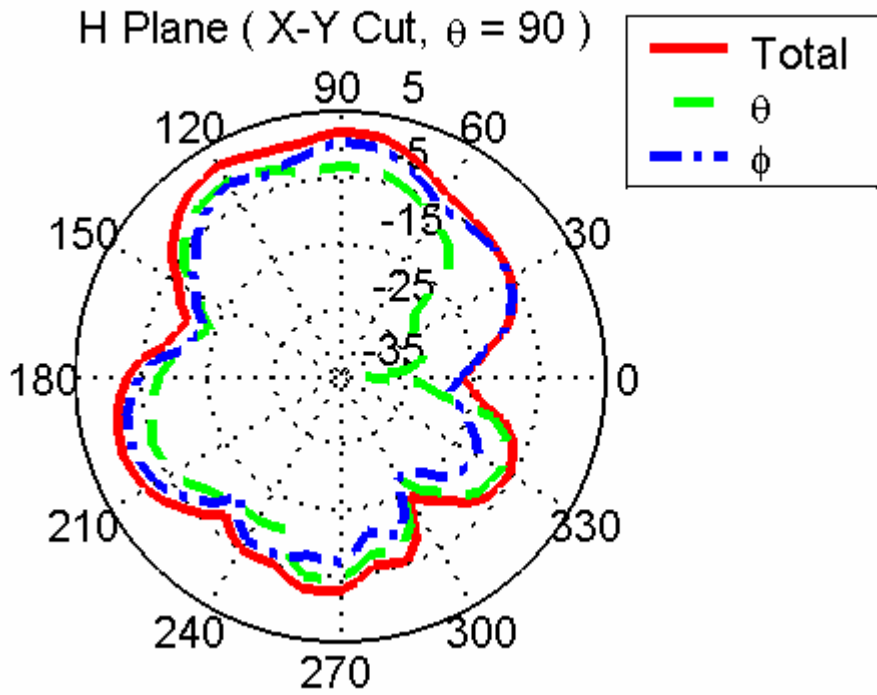
Center Frequency	<b>2450 MHz</b>
Horizontal (dBi) peak	-1.1
Vertical (dBi) peak	-2.6

**Tx1 antenna: 2500 MHz**



Center Frequency	<b>2500 MHz</b>
Horizontal (dBi) peak	-1.3
Vertical (dBi) peak	-2.1

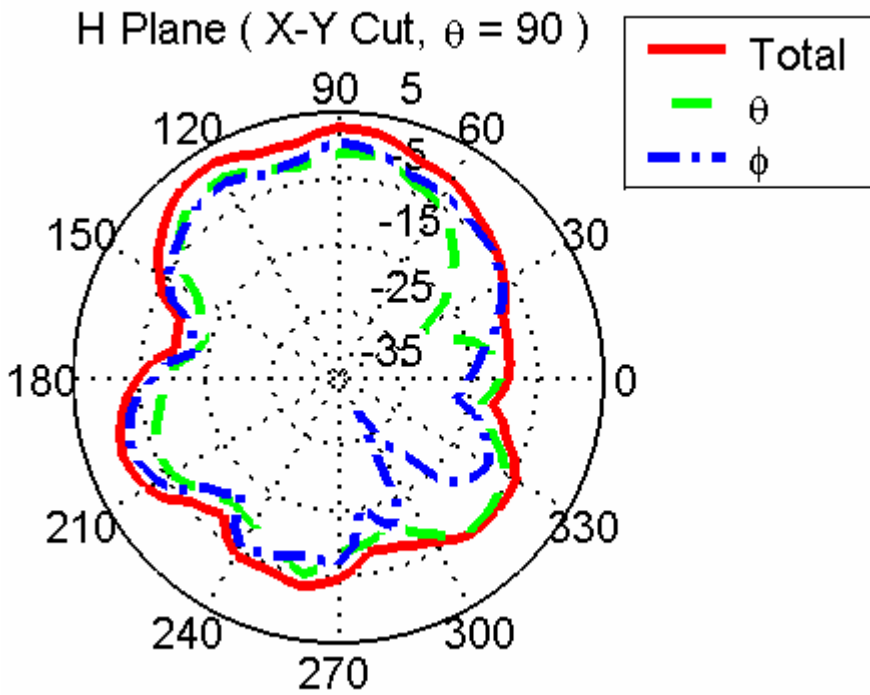
**Tx2 (or Rx2) antenna: 2400 MHz (Plot is not required if 2<sup>nd</sup> Antenna is receive only e.g. Rx2 for 512 family)**



Center Frequency	<b>2400 MHz</b>
Horizontal (dBi) peak	-1.1
Vertical (dBi) peak	0.4

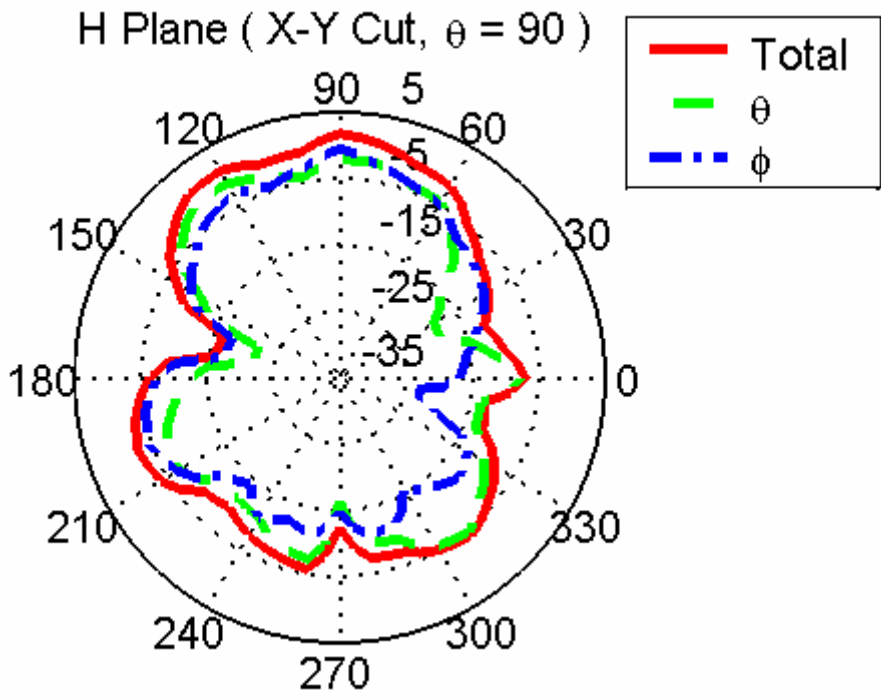


**Tx2 (or Rx2) antenna: 2450 MHz (Plot is not required if 2<sup>nd</sup> Antenna is receive only e.g. Rx2 for 512 family)**



Center Frequency	<b>2450 MHz</b>
Horizontal (dBi) peak	-0.2
Vertical (dBi) peak	0.5

**Tx2 (or Rx2) antenna: 2500 MHz (Plot is not required if 2<sup>nd</sup> Antenna is receive only e.g. Rx2 for 512 family)**



Center Frequency	<b>2500 MHz</b>
Horizontal (dBi) peak	-1.0
Vertical (dBi) peak	-0.5

## 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 (measurements are not required for receive-only antenna). Any antenna that transmits must show dimensions to bottom of laptop.

**MAIN ANTENNA (TX1)**



**260 mm**

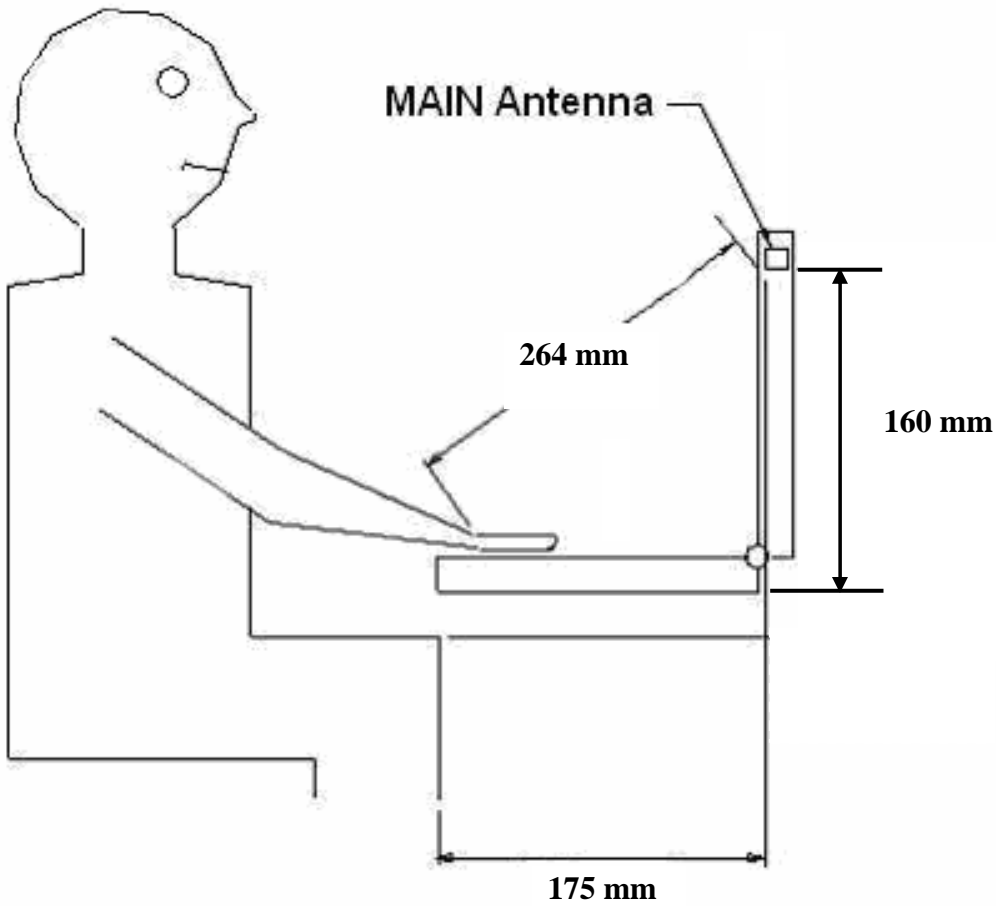
**160 mm**

**175 mm**



## Section 6. Antenna dimensional information for SAR evaluation

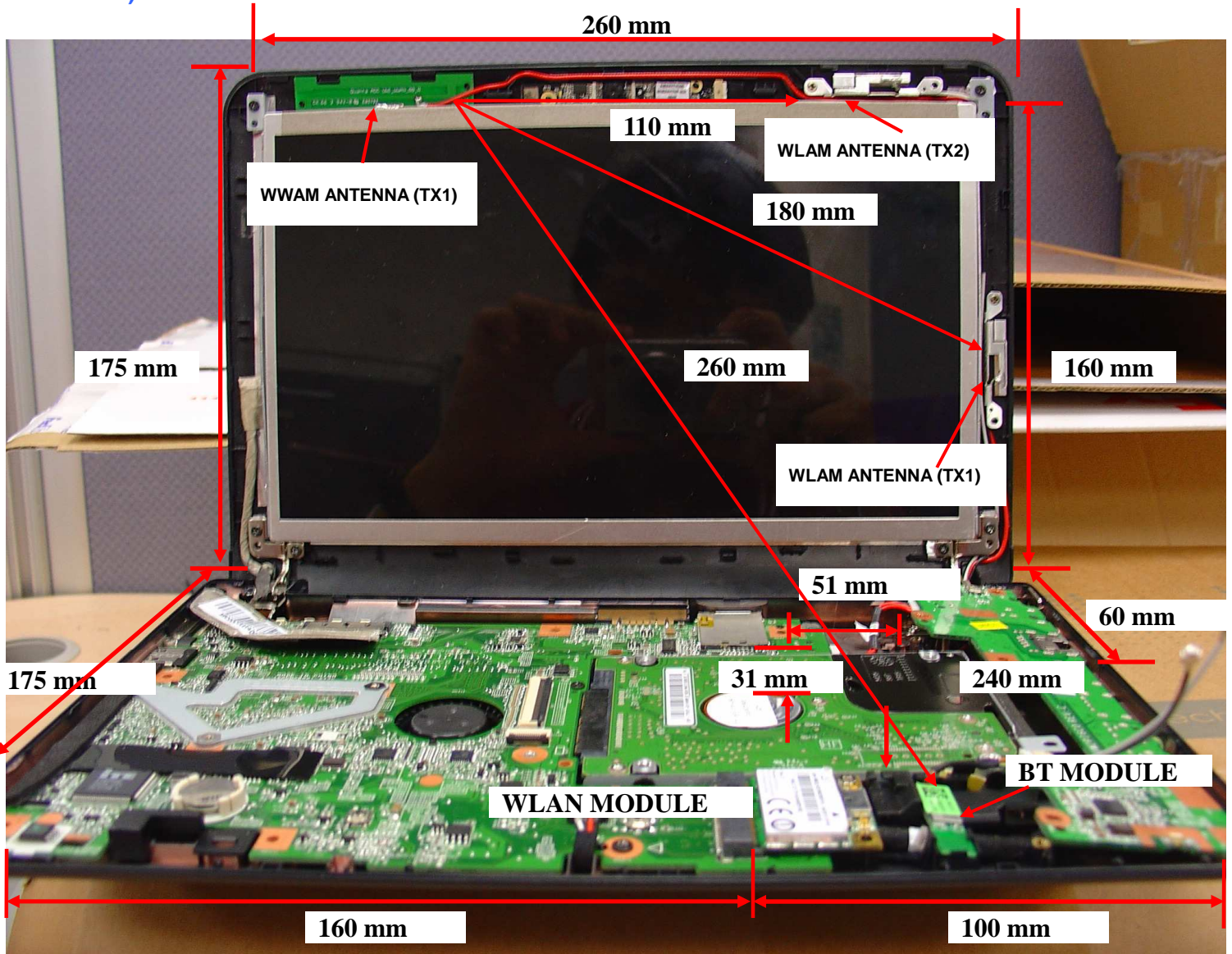
Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between the transmit antennas and the user (excluding hands, wrist, feet, lap/ thigh, and ankle)



## Section 7. Diagram Example of Co-Location Antenna Separation

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between all WLAN transmit antennas and other co-located radiator transmit antenna such as Bluetooth, WWAN,...

(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						