

# Regulatory WLAN Antenna Information

(English Language Required for Intel Regulatory Review / Approval)

**(OEM/ODM or antenna vendor is required to complete this document with platform antenna information.  
Remove Intel references and make this your own document)**

<b>Platform</b>	
Platform Owner	Gateway
Brand Name	Gateway
Model Name	Tempest
ODM	Arima
Target Launch Date	(2007/ 03/ 26)
<b>Antenna</b>	
Brand Name	
Part Number	<input checked="" type="checkbox"/> Tx1 Antenna: 021020168NC3587
	<input checked="" type="checkbox"/> Tx2 Antenna: 021020168NC3587-1
	<input checked="" type="checkbox"/> Tx3 (or Rx3) Antenna: 021020168NC3587-2
<b>Module</b>	
With WLAN Module	<input type="checkbox"/> WM3B2200BG
(Check Box)	<input type="checkbox"/> WM3B2915ABG
	<input checked="" type="checkbox"/> WM3945ABG
	<input checked="" type="checkbox"/> 4965AGN

## 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 <b>and</b> 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. <b>(S. Korea requires photographs of antennas for approval submission). Taiwan requires pictures of each antenna type shown in the system.</b>	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

# 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) 3D	1F Peak Gain w/o Cable Loss (dBi)	1G VSWR	1H Cable Loss (dBi)
(P/N:02102016 8NC3587) Tx1 MAIN antenna	Galtronics	PIFA	(P/N: 03-259-800) 50 ohm Coaxial. length: 80.0cm diameter: 1.37mm Connector: U.FL	2400-2500MHz <b>-0.25</b> dBi (peak)	2400-2500MHz <b>1.5</b> dBi (peak)	2400-2500MHz <b>1.4:1</b> max	2400-2500MHz <b>1.75</b> dBi (peak)
				5150-5350MHz <b>0</b> dBi (peak)	5150-5350MHz <b>2.6</b> dBi (peak)	5150-5350MHz <b>1.3:1</b> max	5150-5350MHz <b>2.6</b> dBi (peak)
				5470-5725MHz <b>0.58</b> dBi (peak)	5470-5725MHz <b>3.18</b> dBi (peak)	5470-5725MHz <b>1.4:1</b> max	5470-5725MHz <b>2.6</b> dBi (peak)
				5725-5850MHz <b>1.03</b> dBi (peak)	5725-5850MHz <b>3.63</b> dBi (peak)	5725-5850MHz <b>1.8:1</b> max	5725-5850MHz <b>2.6</b> dBi (peak)
(P/N:02102016 8NC3587-1) Tx2 AUX antenna	Galtronics	PIFA	(P/N: 03-262-702) 50 ohm Coaxial. length: 70.2cm diameter: 1.13mm Connector: U.FL	2400-2500MHz <b>3.64</b> dBi (peak)	2400-2500MHz <b>5.64</b> dBi (peak)	2400-2500MHz <b>1.3:1</b> max	2400-2500MHz <b>2</b> dBi (peak)
				5150-5350MHz <b>0.5</b> dBi (peak)	5150-5350MHz <b>3.5</b> dBi (peak)	5150-5350MHz <b>1.5:1</b> max	5150-5350MHz <b>3</b> dBi (peak)
				5470-5725MHz <b>1.26</b> dBi (peak)	5470-5725MHz <b>4.26</b> dBi (peak)	5470-5725MHz <b>1.3:1</b> max	5470-5725MHz <b>3</b> dBi (peak)
				5725-5850MHz <b>0.73</b> dBi (peak)	5725-5850MHz <b>3.73</b> dBi (peak)	5725-5850MHz <b>1.8:1</b> max	5725-5850MHz <b>3</b> dBi (peak)
(P/N:02102016 8NC3587-2) Tx3 (or Rx3) MIMO antenna	Galtronics	PIFA	(P/N: 03-263-799) 50 ohm Coaxial. length: 79.9cm diameter: 1.13mm Connector: U.FL	2400-2500MHz <b>1.77</b> dBi (peak)	2400-2500MHz <b>4.02</b> dBi (peak)	2400-2500MHz <b>1.5:1</b> max	2400-2500MHz <b>2.25</b> dBi (peak)
				5150-5350MHz <b>-0.01</b> dBi (peak)	5150-5350MHz <b>3.49</b> dBi (peak)	5150-5350MHz <b>1.8:1</b> max	5150-5350MHz <b>3.5</b> dBi (peak)
				5470-5725MHz <b>-0.31</b> dBi (peak)	5470-5725MHz <b>3.2</b> dBi (peak)	5470-5725MHz <b>1.4:1</b> max	5470-5725MHz <b>3.5</b> dBi (peak)
				5725-5850MHz <b>-0.52</b> dBi (peak)	5725-5850MHz <b>3</b> dBi (peak)	5725-5850MHz <b>1.8:1</b> max	5725-5850MHz <b>3.5</b> dBi (peak)

### Antenna Peak Gain Table:

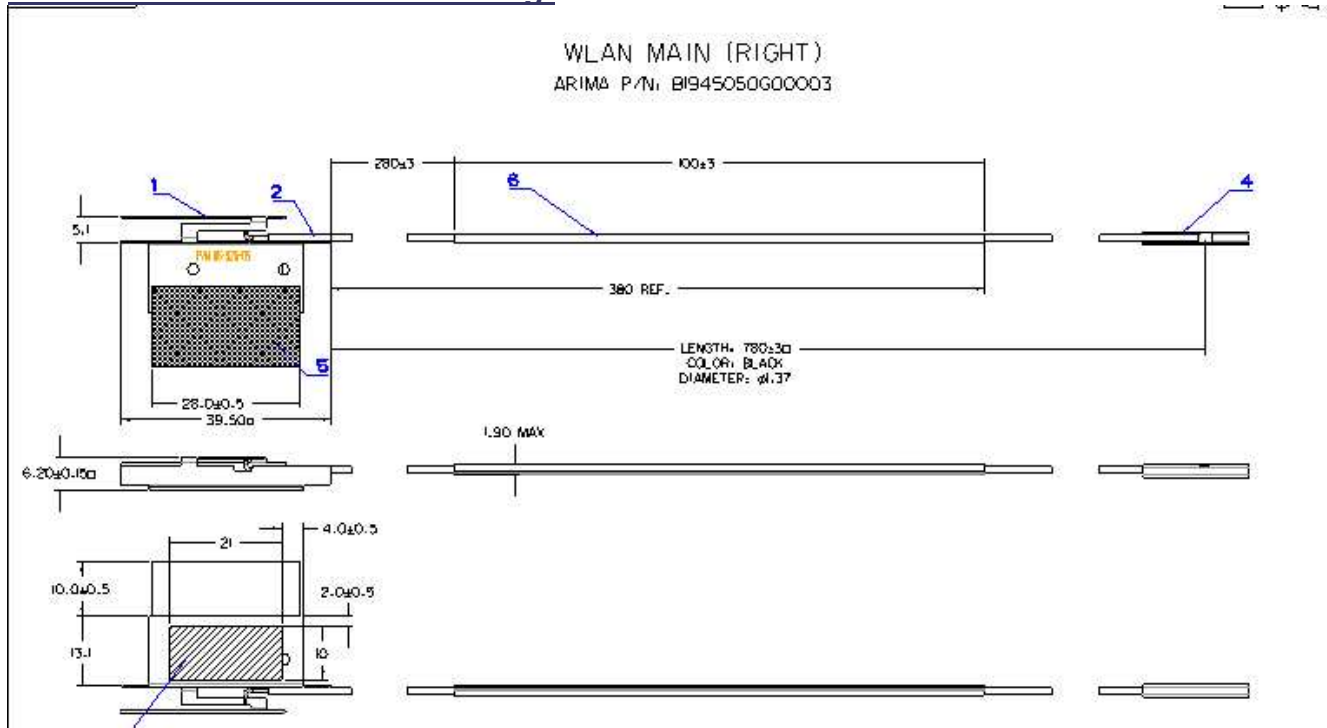
Frequency (MHz)	Tx1 (main) antenna		Tx2 (aux) Antenna		Tx3 (MIMO) Antenna	
	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)	Horizontal (dBi)	Vertical (dBi)
2400	-2.67	-2.53	2.13	-0.97	-0.28	-1.34
2450	-1.96	-2.42	2.16	-0.83	-1.5	-2.51
2500	-3.17	-2.74	2.38	2.38	-0.69	-1.59
5150	-1.43	-5.6	-0.66	-6.45	-0.38	-7.96
5250	-1.58	-5.05	-0.67	-6.38	-1.23	-7.30
5350	-0.44	-4.02	-0.3	-5.87	-1.13	-7.41
5470	-0.37	-1.48	0.66	-4.87	-0.82	-4.75
5600	-1.77	-2.02	0.94	-4.57	-0.7	-4.56
5725	-1.35	-2.97	0.1	-3.57	-1.56	-5.63
5785	-1.17	-2.59	-0.63	-2.16	-1.29	-5.26
5850	-0.45	-2.94	-1.17	-2.76	-1.61	-6.10

- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/V

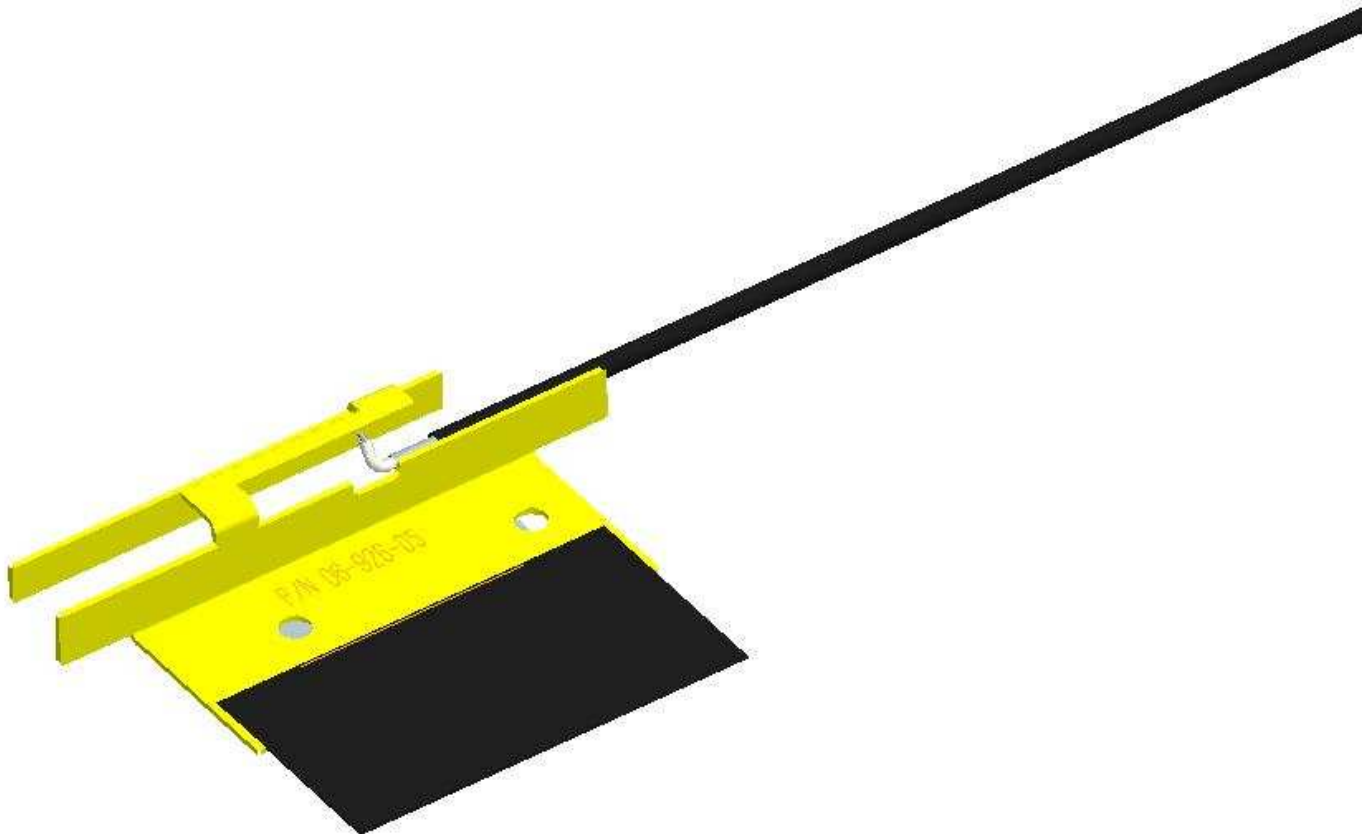
## Section 2. Dimensioned Photos or Drawings of Antennas

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

**Tx1 Antenna Dimensioned Drawing:**

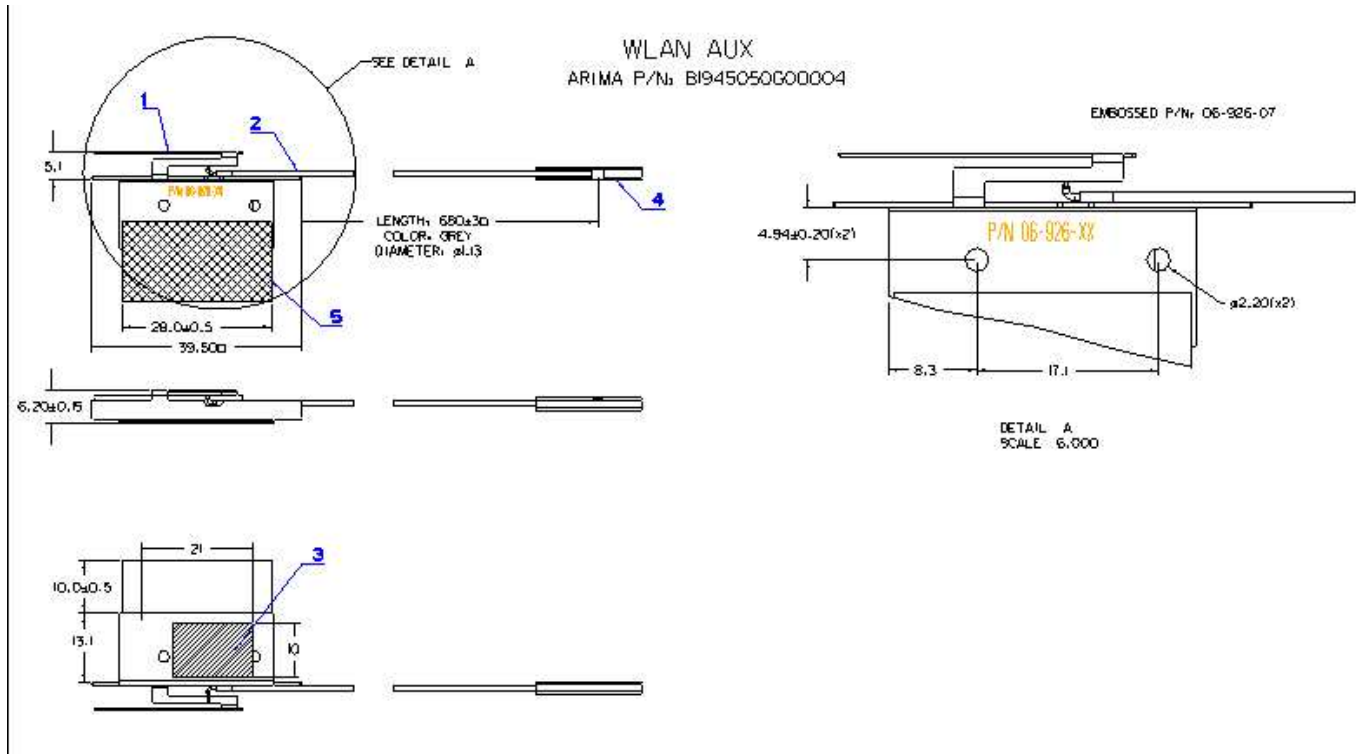


**Tx1 Antenna Photo:**

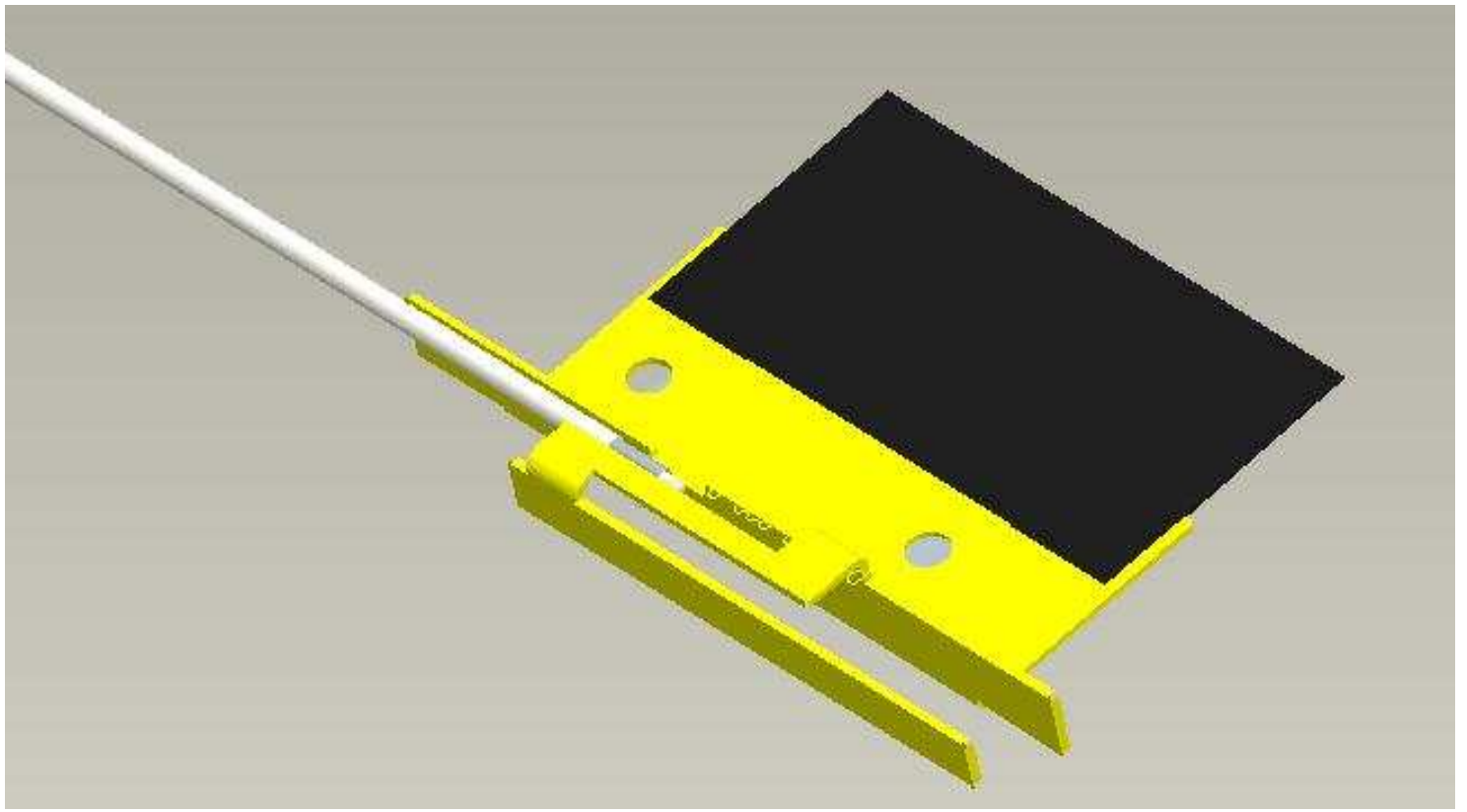


**Include a dimensioned photo and dimensioned drawing of Tx2 antenna here.**

**Tx2 Antenna Dimensioned Drawing:**

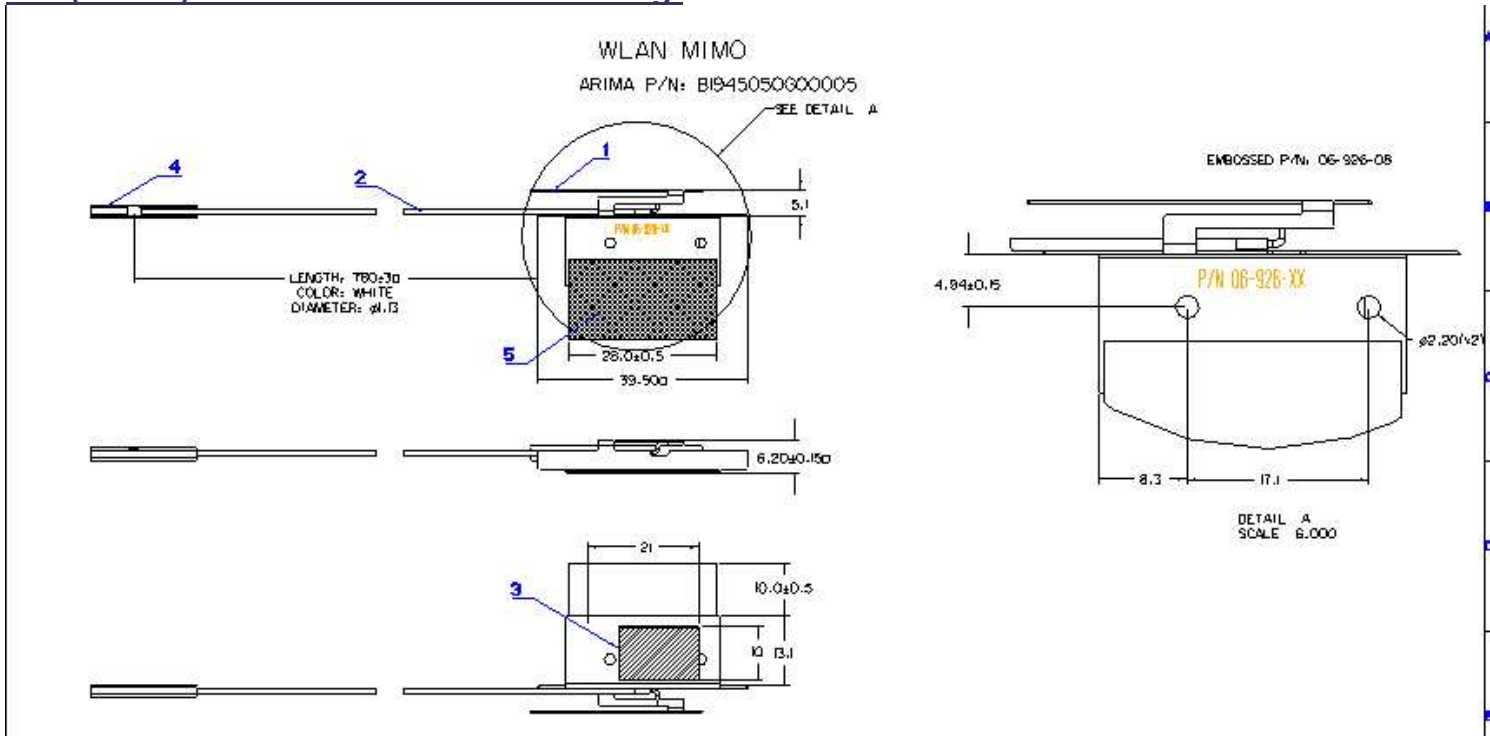


**Tx2 Antenna Photo:**

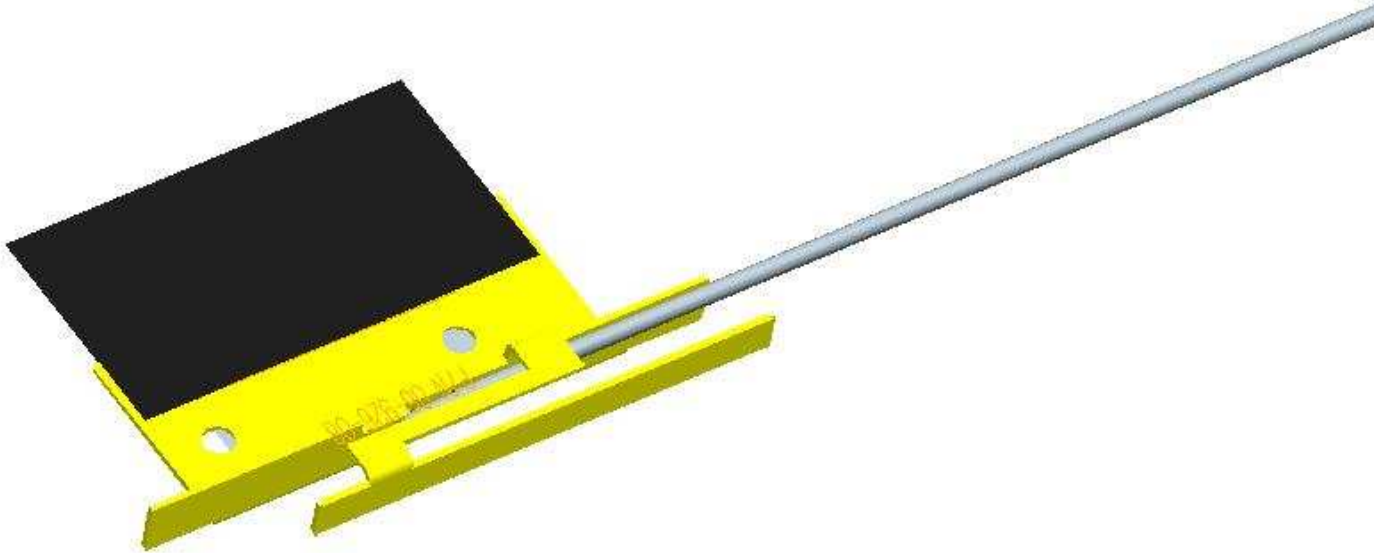


Include a dimensioned photo and dimensioned drawing of Tx3 (or Rx3) antenna here.

**Tx3 (or Rx3) Antenna Dimensioned Drawing:**

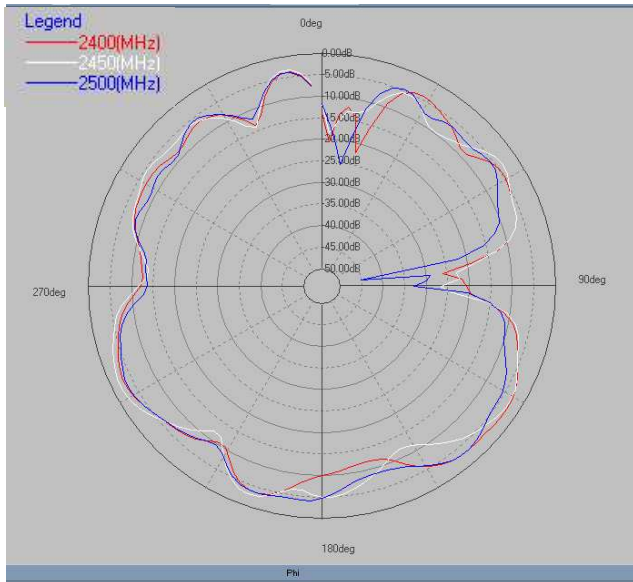


**Tx3 (or Rx3) Antenna Photo:**

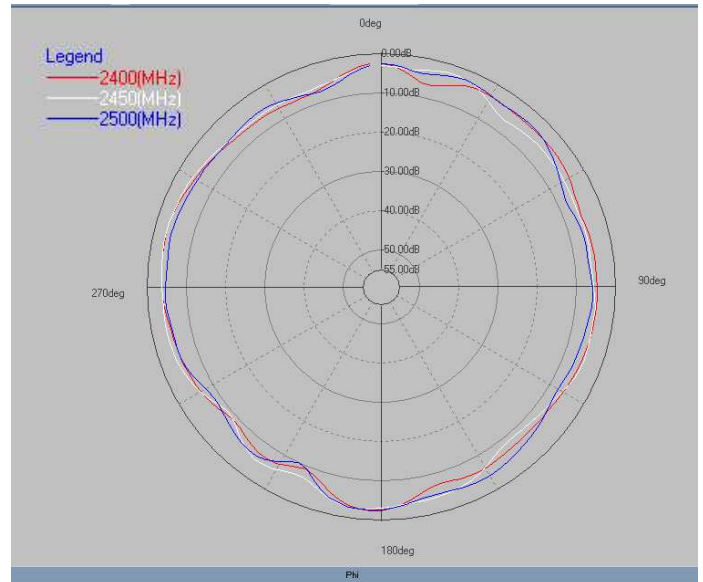


## Section 3. Radiation characteristics of antennae Loaded in Host Platform

### 2400-2500MHz radiation characteristic TX1



Horizontal



Vertical

#### Tx1 antenna: 2400

Center Frequency	<b>2400 MHz</b>
Horizontal (dBi) peak	<b>-2.67</b>
Vertical (dBi) peak	<b>-2.53</b>

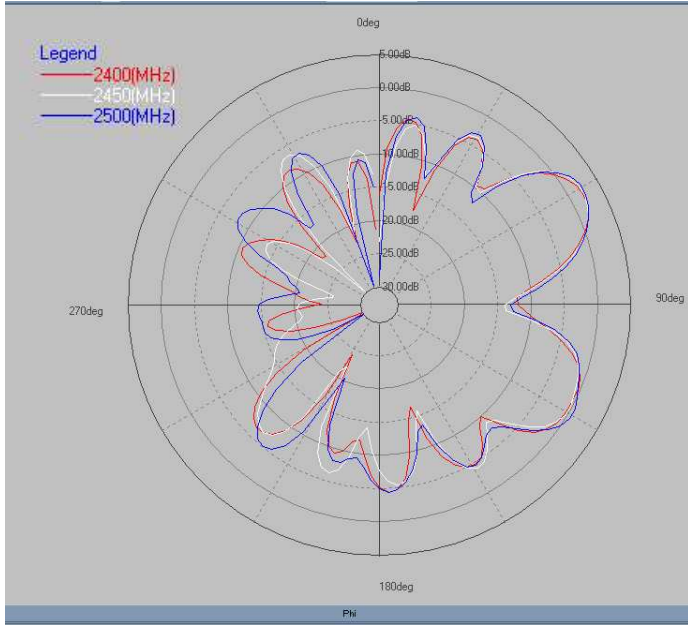
#### Tx1 antenna: 2450

Center Frequency	<b>2450 MHz</b>
Horizontal (dBi) peak	<b>-1.96</b>
Vertical (dBi) peak	<b>-2.42</b>

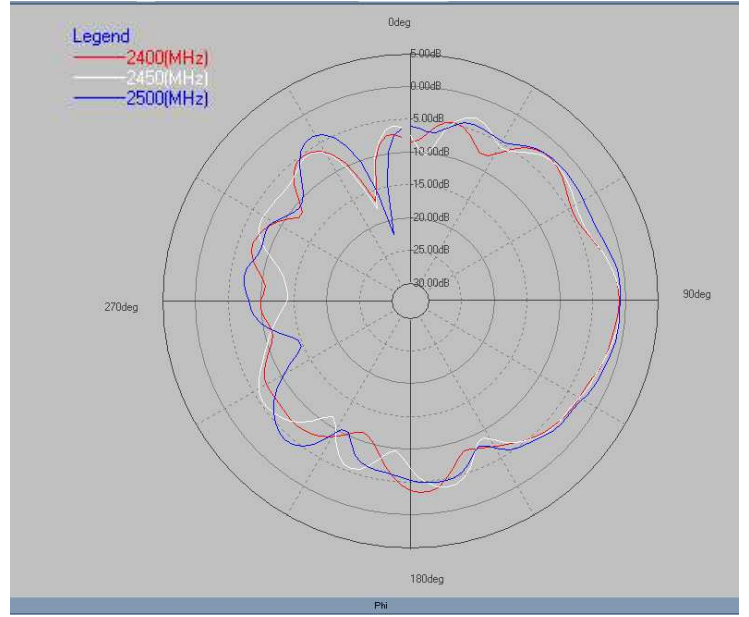
#### Tx1 antenna: 2500

Center Frequency	<b>2500 MHz</b>
Horizontal (dBi) peak	<b>-3.17</b>
Vertical (dBi) peak	<b>-2.74</b>

## 2400-2500MHz radiation characteristic TX2



Horizontal



Vertical

### Tx2 antenna: 2400

Center Frequency	<b>2400 MHz</b>
Horizontal (dBi) peak	<b>2.13</b>
Vertical (dBi) peak	<b>-0.97</b>

### Tx2 antenna: 2450

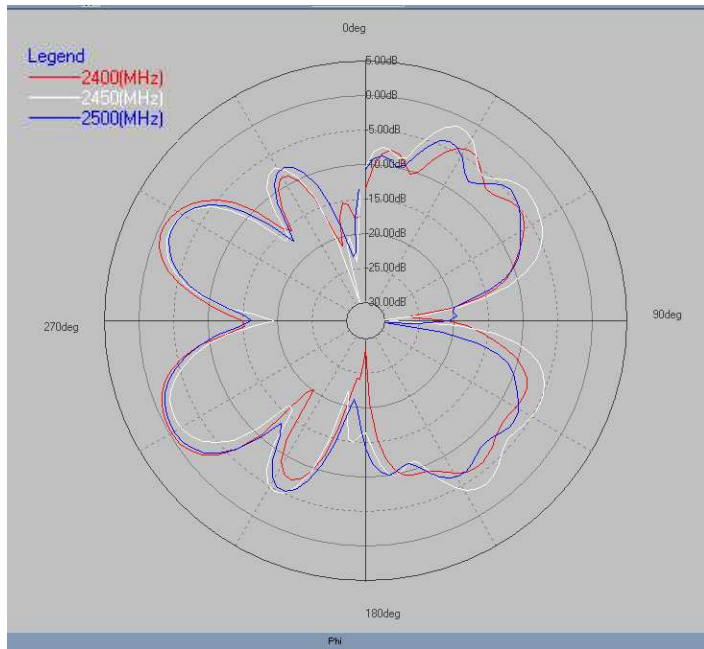
Center Frequency	<b>2450 MHz</b>
Horizontal (dBi) peak	<b>2.16</b>
Vertical (dBi) peak	<b>-0.83</b>

### Tx2 antenna: 2500

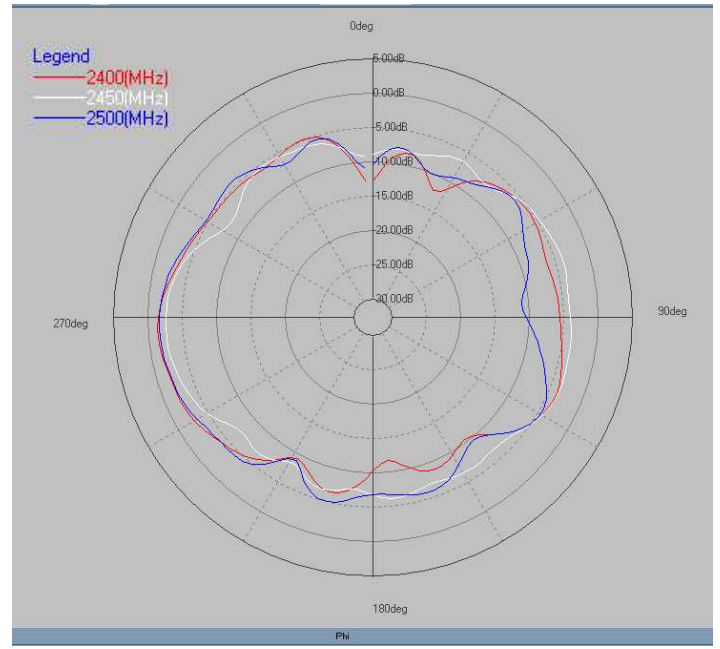
Center Frequency	<b>2500 MHz</b>
Horizontal (dBi) peak	<b>2.38</b>
Vertical (dBi) peak	<b>-0.71</b>



**2400-2500MHz radiation characteristic TX3**



Horizontal



Vertical

**Tx3 antenna: 2400**

Center Frequency	<b>2400 MHz</b>
Horizontal (dBi) peak	<b>-0.28</b>
Vertical (dBi) peak	<b>-1.34</b>

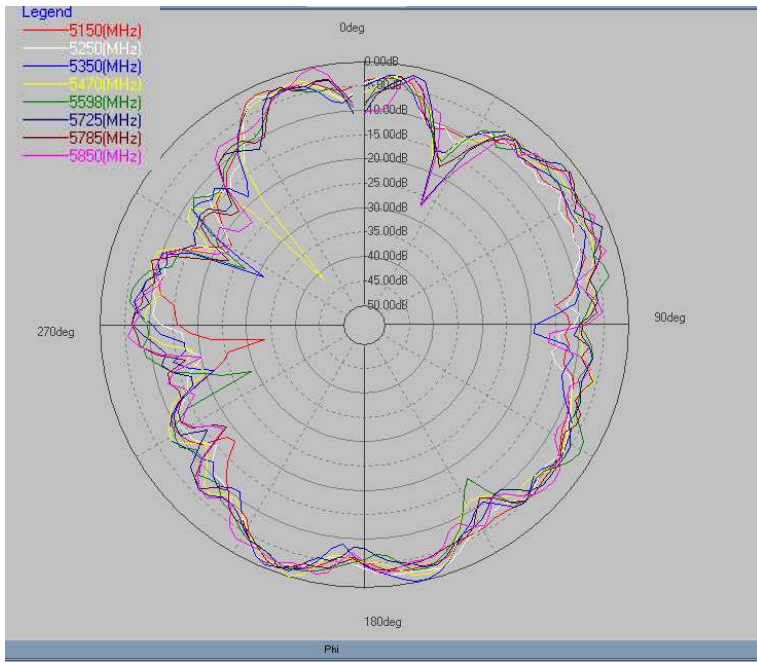
**Tx3 antenna: 2450**

Center Frequency	<b>2450 MHz</b>
Horizontal (dBi) peak	<b>-1.5</b>
Vertical (dBi) peak	<b>-2.51</b>

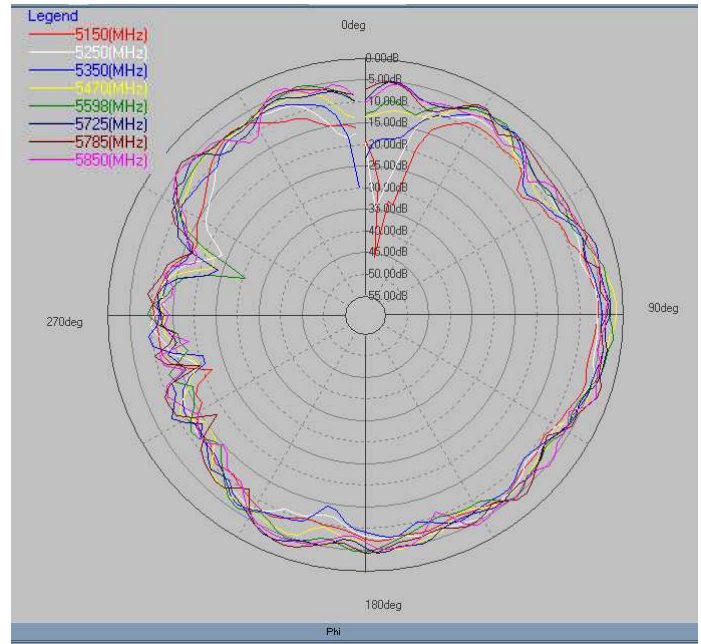
**Tx3 antenna: 2500**

Center Frequency	<b>2500 MHz</b>
Horizontal (dBi) peak	<b>-0.69</b>
Vertical (dBi) peak	<b>-1.59</b>

## 5150-5850 MHz radiation characteristic For TX1



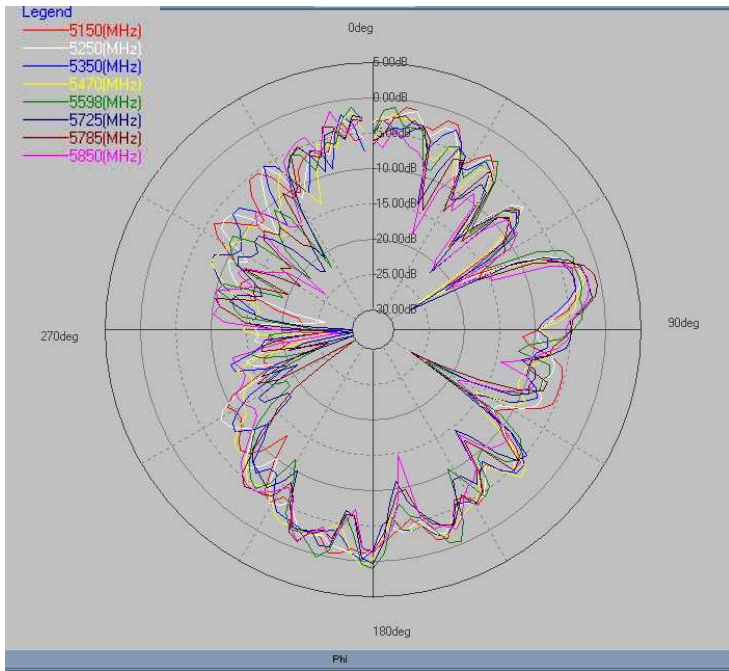
Horizontal



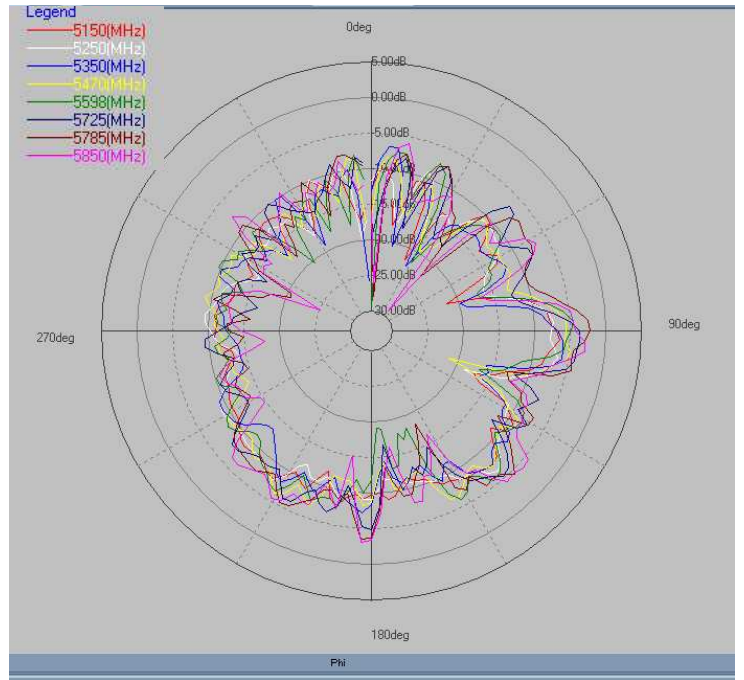
Vertical

Center Frequency	Horizontal (dBi) peak	Vertical (dBi) peak
<b>5150</b>	<b>-1.43</b>	<b>-5.6</b>
<b>5250</b>	<b>-1.58</b>	<b>-5.05</b>
<b>5350</b>	<b>-0.44</b>	<b>-4.02</b>
<b>5470</b>	<b>-0.37</b>	<b>-1.48</b>
<b>5598</b>	<b>-1.77</b>	<b>-2.02</b>
<b>5720</b>	<b>-1.35</b>	<b>-2.97</b>
<b>5785</b>	<b>-1.17</b>	<b>-2.59</b>
<b>5850</b>	<b>-0.45</b>	<b>-2.94</b>

**5150-5850 MHz radiation characteristic For TX2**



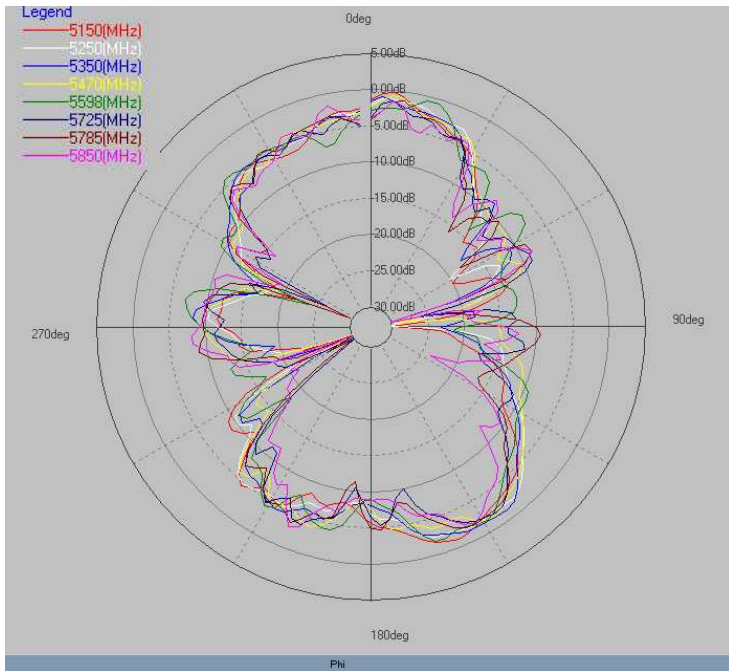
Horizontal



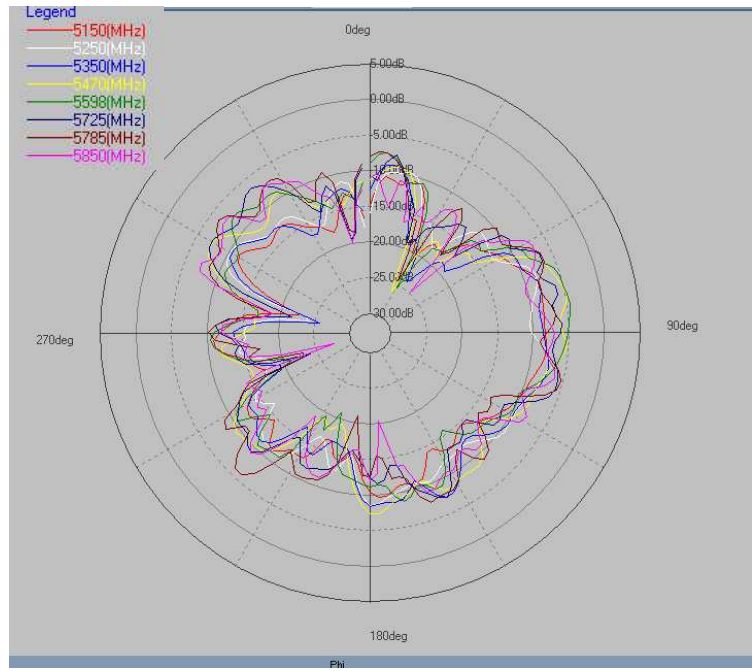
Vertical

Center Frequency	Horizontal (dBi) peak	Vertical (dBi) peak
<b>5150</b>	<b>-0.66</b>	<b>-6.45</b>
<b>5250</b>	<b>-0.67</b>	<b>-6.38</b>
<b>5350</b>	<b>-0.3</b>	<b>-5.87</b>
<b>5470</b>	<b>0.66</b>	<b>-4.87</b>
<b>5598</b>	<b>0.94</b>	<b>-4.57</b>
<b>5720</b>	<b>0.1</b>	<b>-3.57</b>
<b>5785</b>	<b>-0.63</b>	<b>-2.16</b>
<b>5850</b>	<b>-1.17</b>	<b>-2.76</b>

## 5150-5850 MHz radiation characteristic For TX3



Horizontal



Vertical

Center Frequency	Horizontal (dBi) peak	Vertical (dBi) peak
<b>5150</b>	<b>-0.38</b>	<b>-7.96</b>
<b>5250</b>	<b>-1.23</b>	<b>-7.30</b>
<b>5350</b>	<b>-1.13</b>	<b>-7.41</b>
<b>5470</b>	<b>-0.82</b>	<b>-4.75</b>
<b>5598</b>	<b>-0.7</b>	<b>-4.56</b>
<b>5720</b>	<b>-1.56</b>	<b>-5.63</b>
<b>5785</b>	<b>-1.29</b>	<b>-5.26</b>
<b>5850</b>	<b>-1.61</b>	<b>-6.10</b>

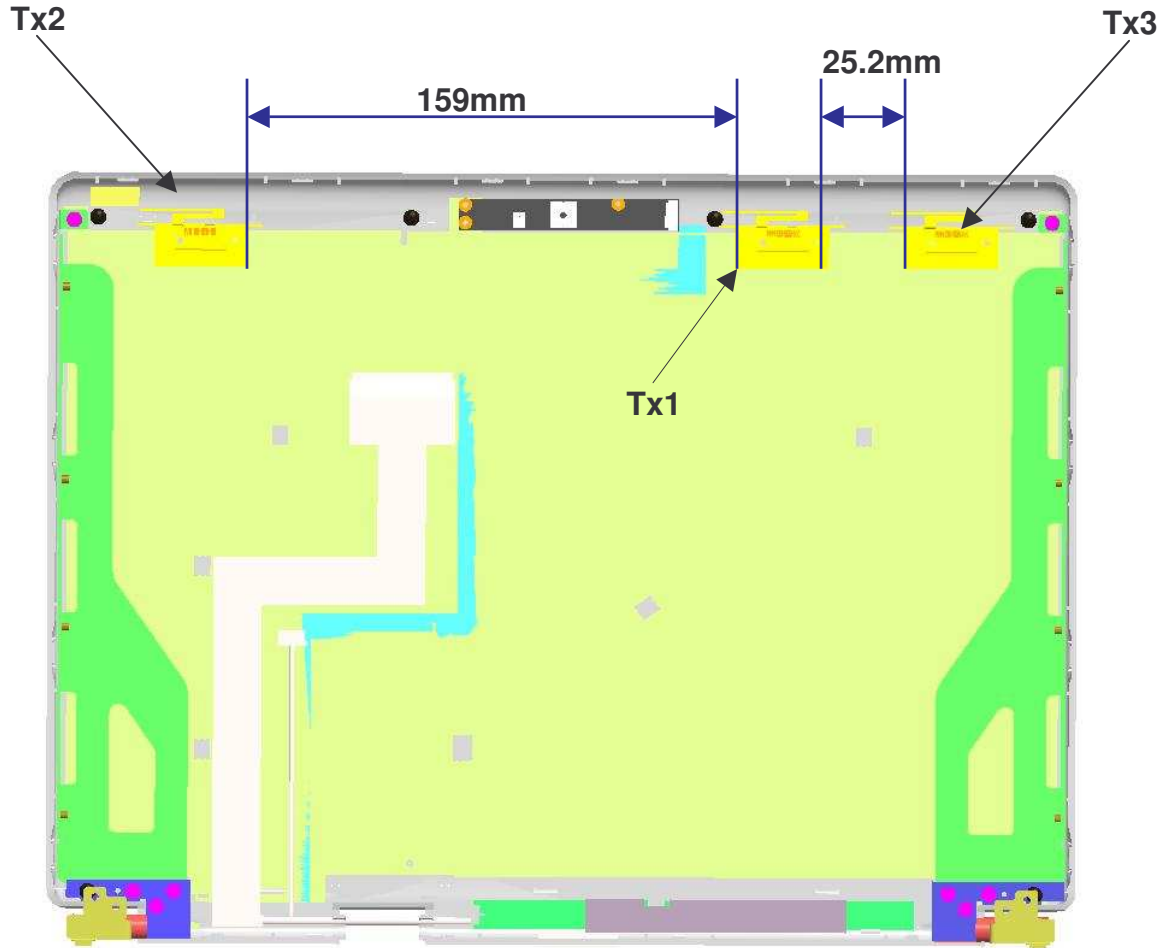
## Section 4. Host Platform Information

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

**Rating Label Photo:**

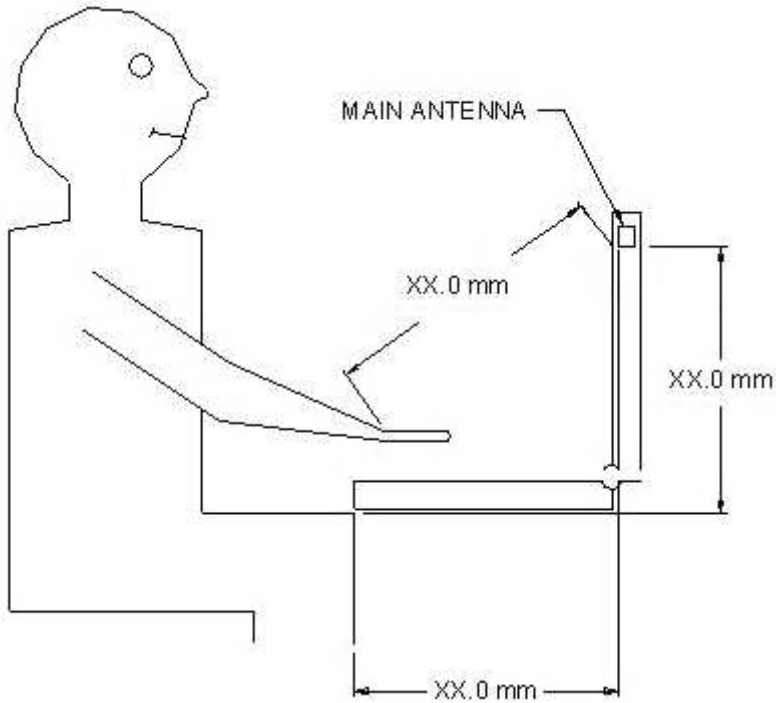
## Section 5. Antenna Host Platform Location Information

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

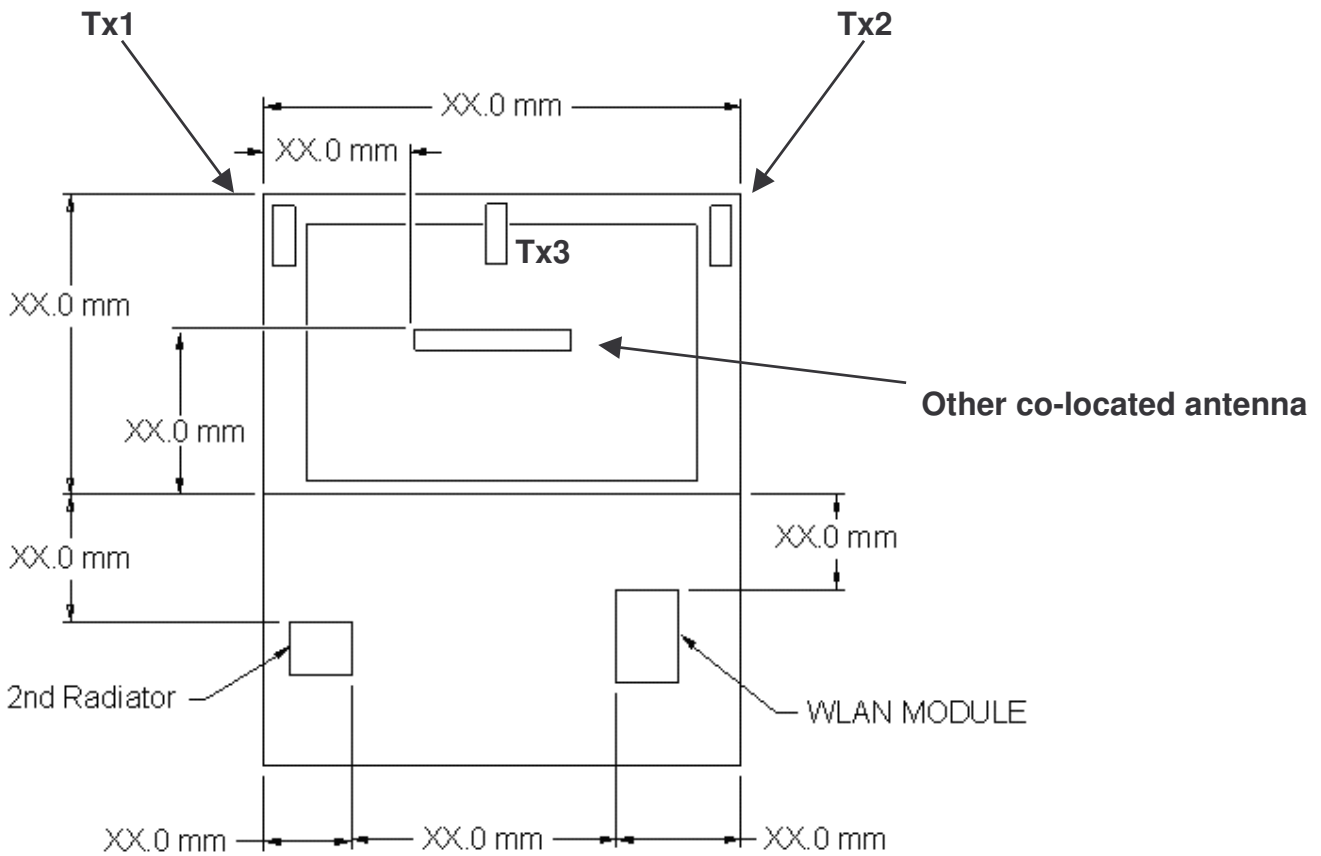
Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between the transmit antennas and the user (excluding hands, wrist, feet, lap/ thigh, and ankle)



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

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between **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						