

# 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)**

**Puma**

**Hitachi Cable Fine Tech, Ltd.  
Hitachi cable, Ltd**

## 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	Main & Aux antenna (Peak Gain W/ cable loss)	Required	Required	Required	Required	Required
	1E OR 1F, 1G, 1H					
1F	Main & Aux antenna (Peak Gain only)	Required	Required	Required	Required	Required
1G	VSWR of cable including connector	Required	Required	Required	Required	Required
1H	Main & Aux antenna (Cable loss W/ connector)	Required	Required	Required	Required	Required
2	Dimensioned Photographs <b>and</b> Drawings of main & auxiliary 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, BT, 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

# Antenna Information

## Section 1. Antenna Assembly Specifications

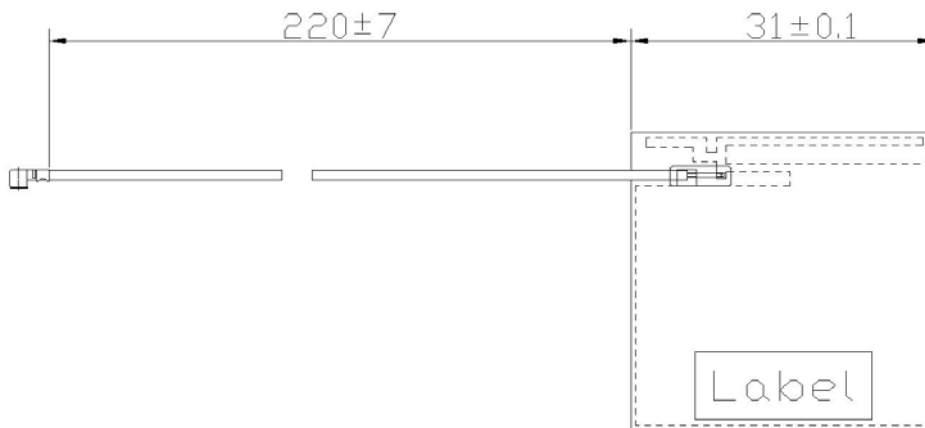
### Antenna Assembly Summary:

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: HBT01(L)-LG04) WLAN Antenna	Hitachi Cable	Film antenna	(P/N: HBT01(L)-LG04) 50 ohm Coaxial. length: 220 mm diameter: 1.13mm Connector: U.FL	2400-2500MHz 3.22dBi (peak)	2400-2500MHz 3.93 dBi (peak)	2400-2500MHz 1.79 max	2400-2500MHz 0.71 dBi (peak)
				4900-5350MHz 0.22Bi (peak)	4900-5350MHz 1.28 dBi (peak)	4900-5350MHz 2.77 max	4900-5350MHz 1.06 dBi (peak)
				5470-5725MHz 2.44dBi (peak)	5470-5725MHz 3.50 dBi (peak)	5470-5725MHz 2.44 max	5470-5725MHz 1.06 dBi (peak)
				5850-6000MHz 0.67dBi(Peak)	5850-6000MHz 1.73 dBi (peak)	5850-6000MHz 1.90 max	5850-6000MHz 1.06 dBi (peak)

## Section 2. Dimensioned Photos or Drawings of Antennas

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

### WLAN Antenna Dimensioned Drawing:



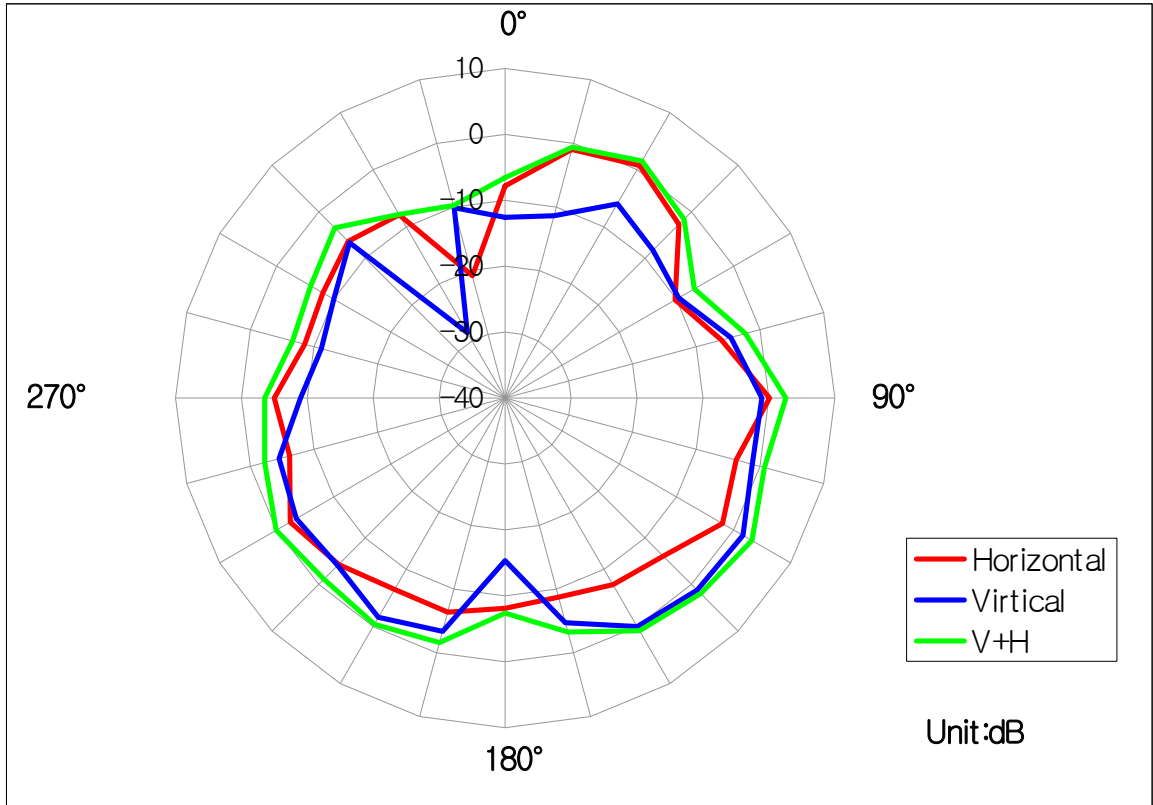
### WLAN Antenna Photo:



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

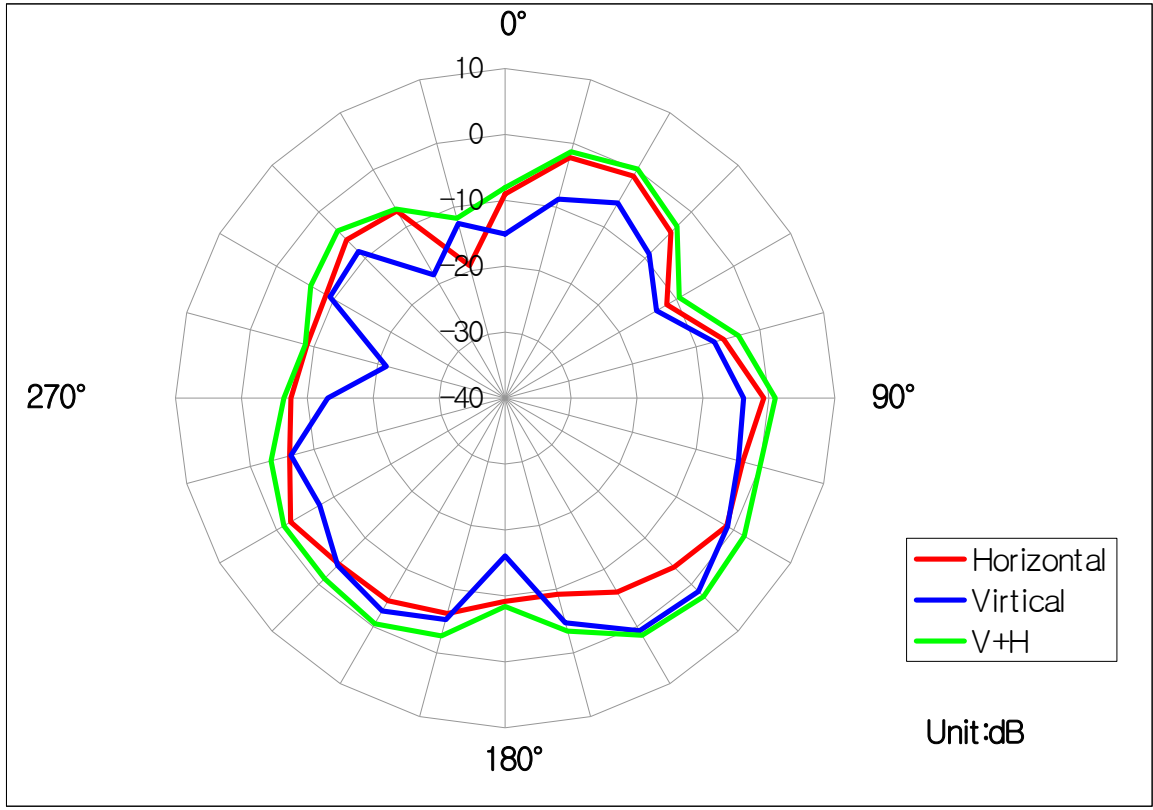
### 2400-2500MHz radiation characteristic

WLAN antenna: 2400 MHz



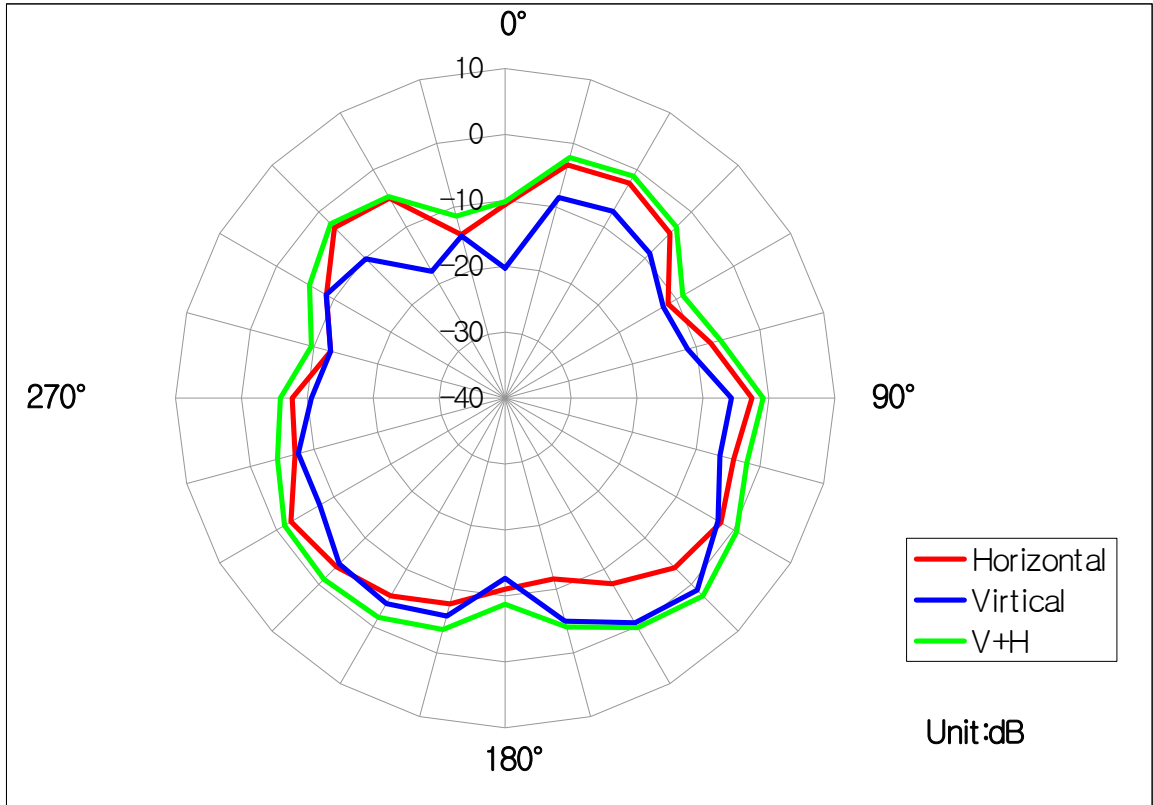
Frequency(GHz)	2.4
MAX.Horizontal(dBi)	0.72
MAX.Virtual(dBi)	1.63
MAX.V+H(dBi)	3.22

**WLAN antenna: 2450 MHz**



Frequency(GHz)	2.45
MAX.Horizontal(dBi)	-0.77
MAX.Vertical(dBi)	1.43
MAX.V+H(dBi)	2.59

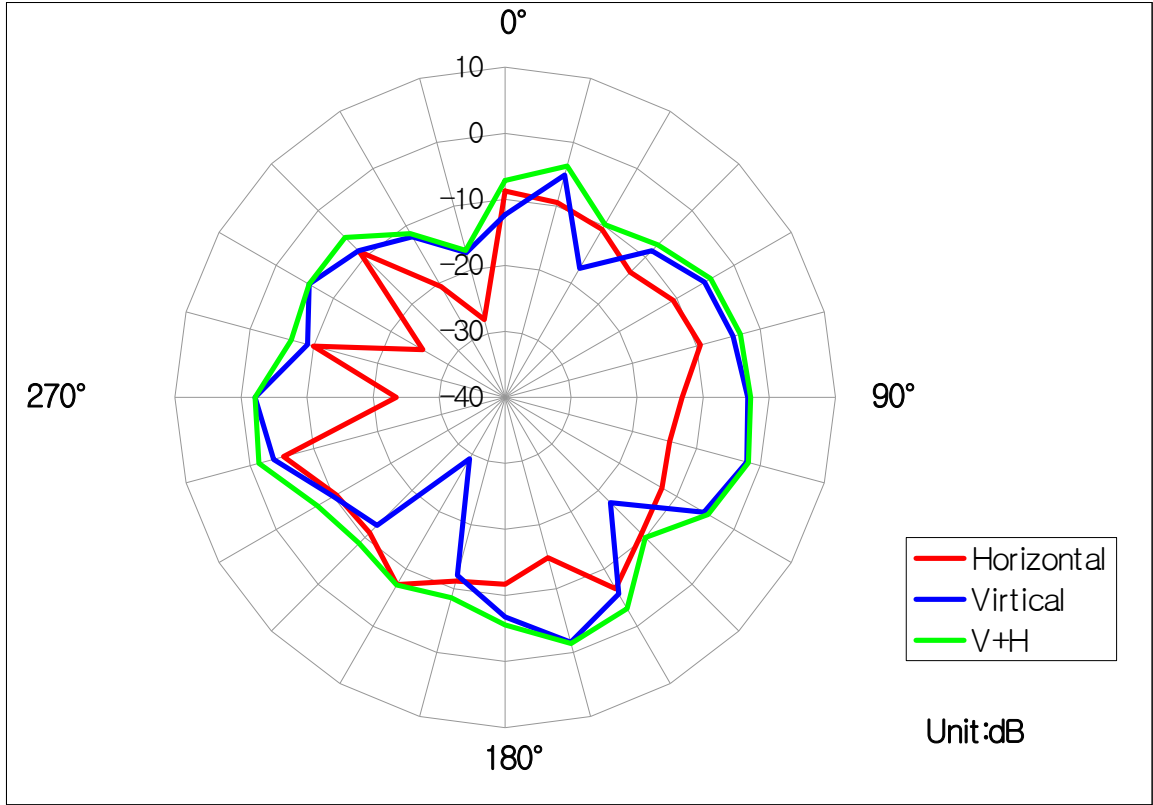
**WLAN antenna: 2500 MHz**



Frequency(GHz)	2.5
MAX.Horizontal(dBi)	-2.23
MAX.Vertical(dBi)	1.20
MAX.V+H(dBi)	2.45

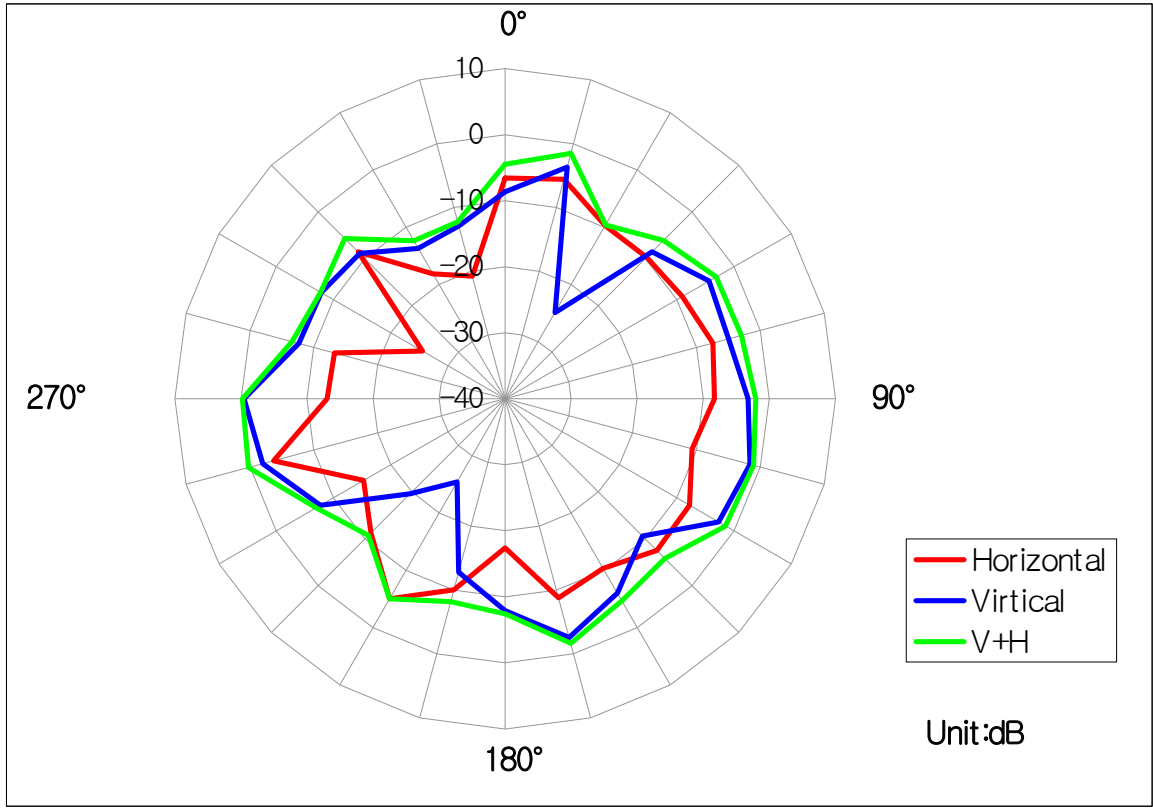
**4900-5350 MHz radiation characteristic**

**WLAN antenna: 5150 MHz**



Frequency(GHz)	5.15
MAX.Horizontal(dBi)	-5.33
MAX.Vertical(dBi)	-1.64
MAX.V+H(dBi)	-1.42

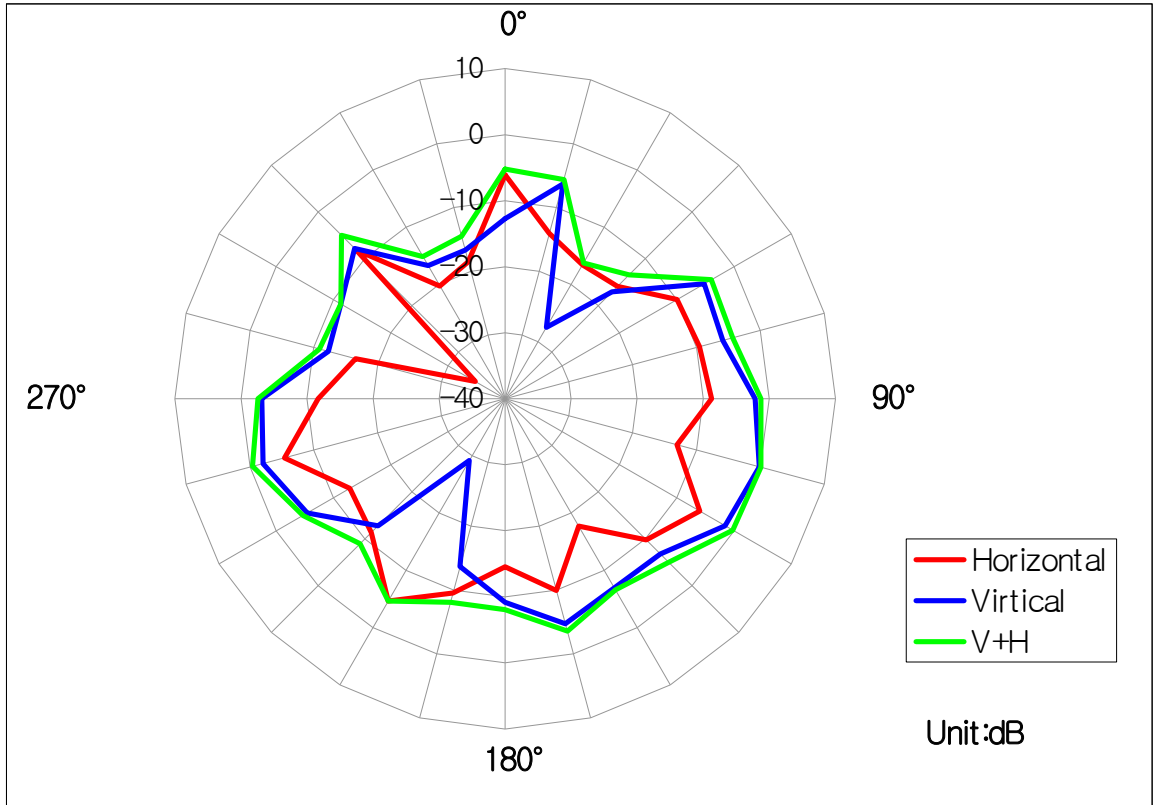
**WLAN antenna: 5250 MHz**



Frequency(GHz)	5.25
MAX.Horizontal(dBi)	-3.73
MAX.Virtual(dBi)	-0.44
MAX.V+H(dBi)	0.22



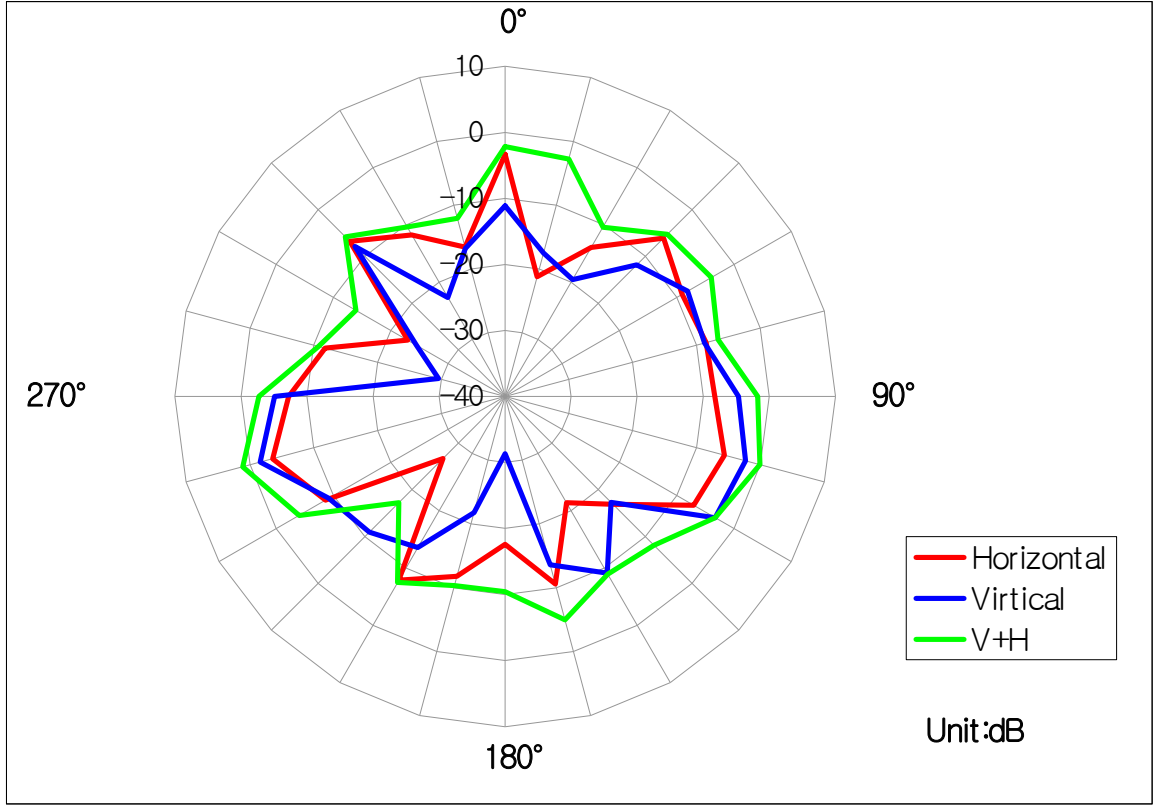
## WLAN antenna: 5350 MHz



Frequency(GHz)	5.35
MAX.Horizontal(dBi)	-4.65
MAX.Virtical(dBi)	-0.17
MAX.V+H(dBi)	0.05

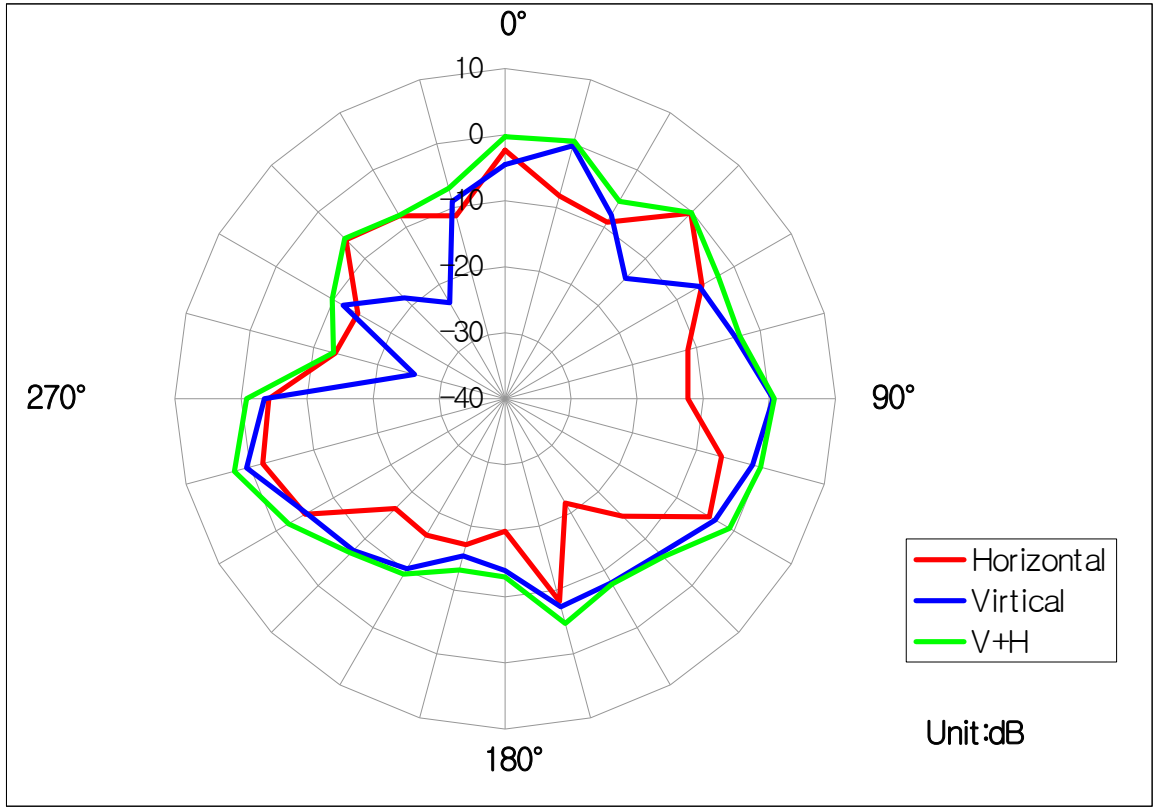
**5470-5725MHz radiation characteristic**

**WLAN antenna: 5470 MHz**



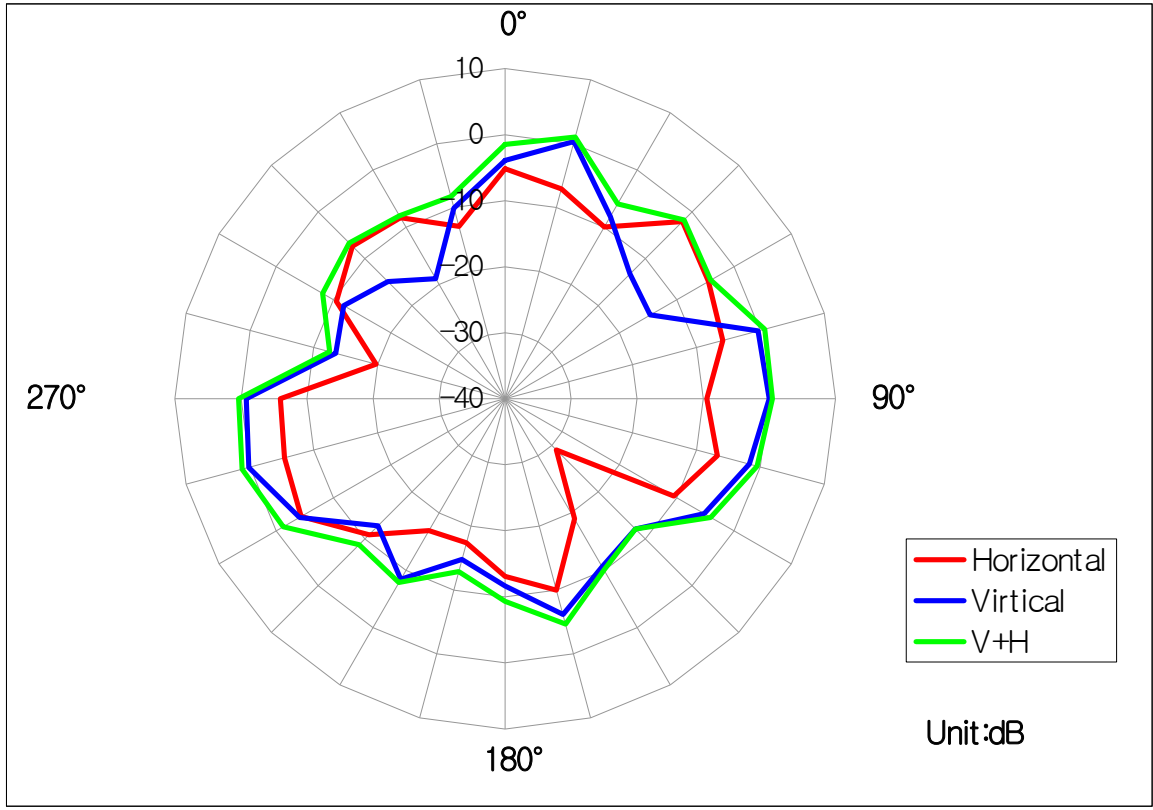
Frequency(GHz)	5.47
MAX.Horizontal(dBi)	-3.34
MAX.Virtual(dBi)	-0.64
MAX.V+H(dBi)	1.15

**WLAN antenna: 5598 MHz**



Frequency(GHz)	5.598
MAX.Horizontal(dBi)	-0.28
MAX.Virtical(dBi)	0.55
MAX.V+H(dBi)	2.44

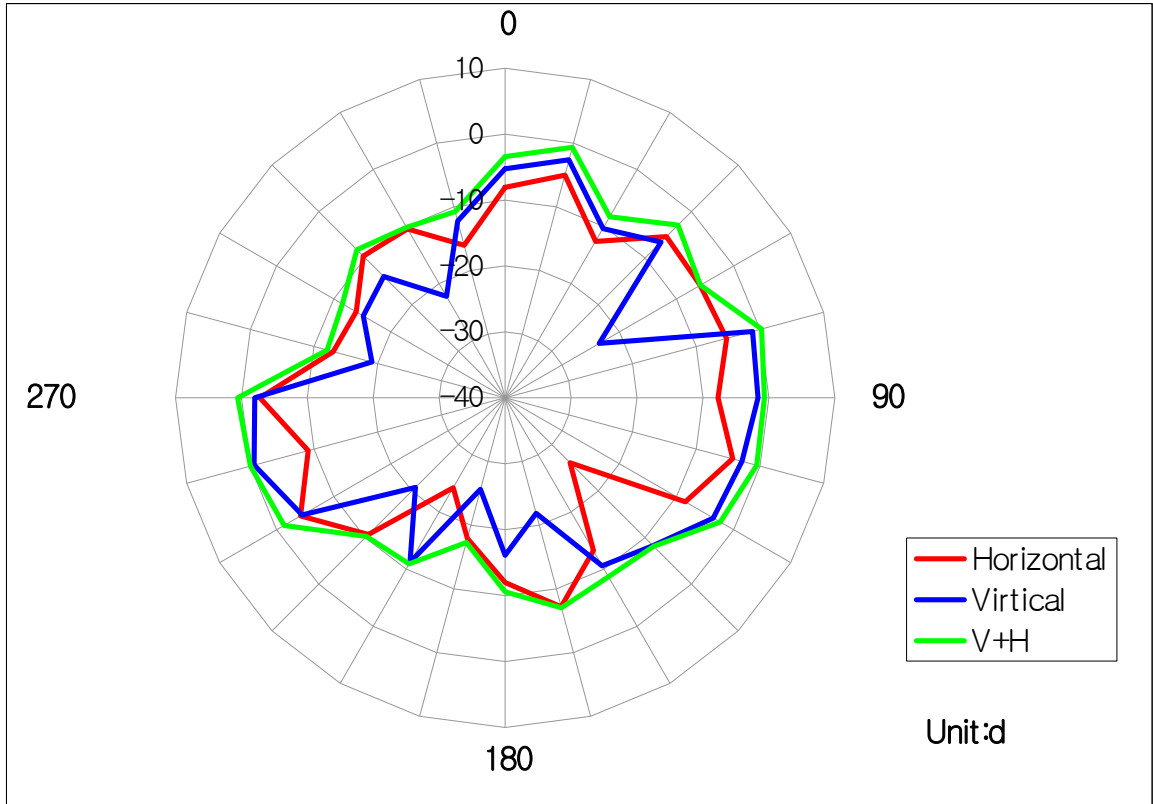
**WLAN antenna: 5725 MHz**



Frequency(GHz)	5.725
MAX.Horizontal(dBi)	-2.02
MAX.Virtual(dBi)	0.32
MAX.V+H(dBi)	1.23

**5850-6000 MHz radiation characteristic**

**WLAN antenna: 5850 MHz**



Frequency(GHz)	5.85
MAX.Horizontal(dBi)	-2.84
MAX.Virtual(dBi)	-0.60
MAX.V+H(dBi)	0.59

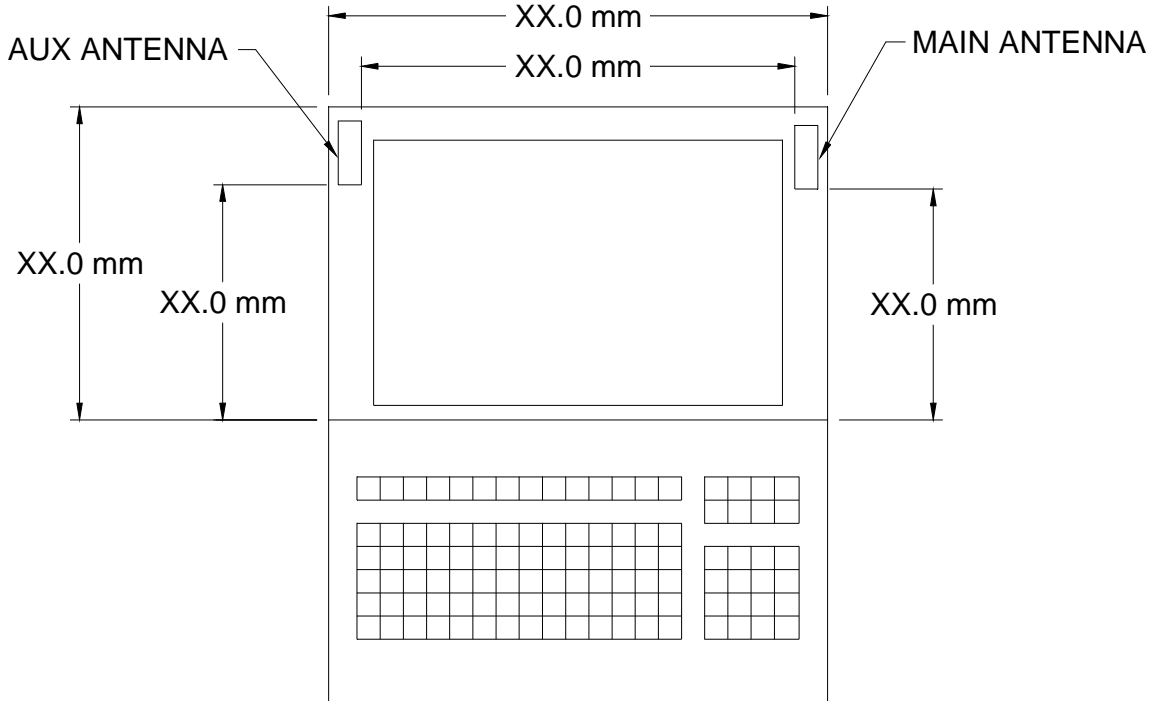
## **Section 4. Host Platform Information**

OEM / ODM Host platform: (XXXXXXX) platform correlated to antenna data  
**Rating Label Photo:**

**Module Location Photo: (if Singapore required)**

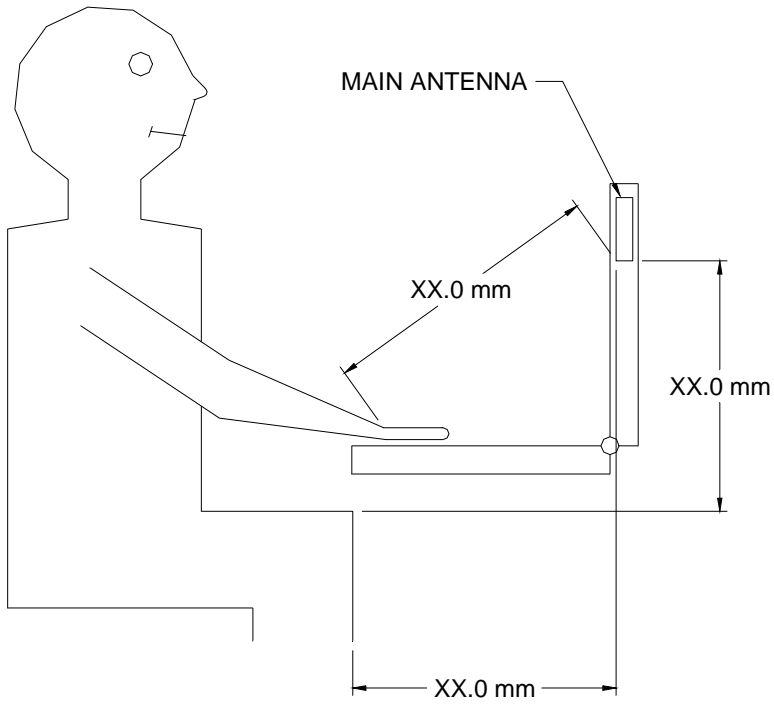
## Section 5. Antenna Host Platform Location Information

Include a **dimensioned photo or dimensioned drawing** of main and auxiliary antenna placements.



## Section 6. Antenna dimensional information for SAR evaluation

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between the transmit (main) antenna and the user (excluding hands, wrist, feet, and ankle)

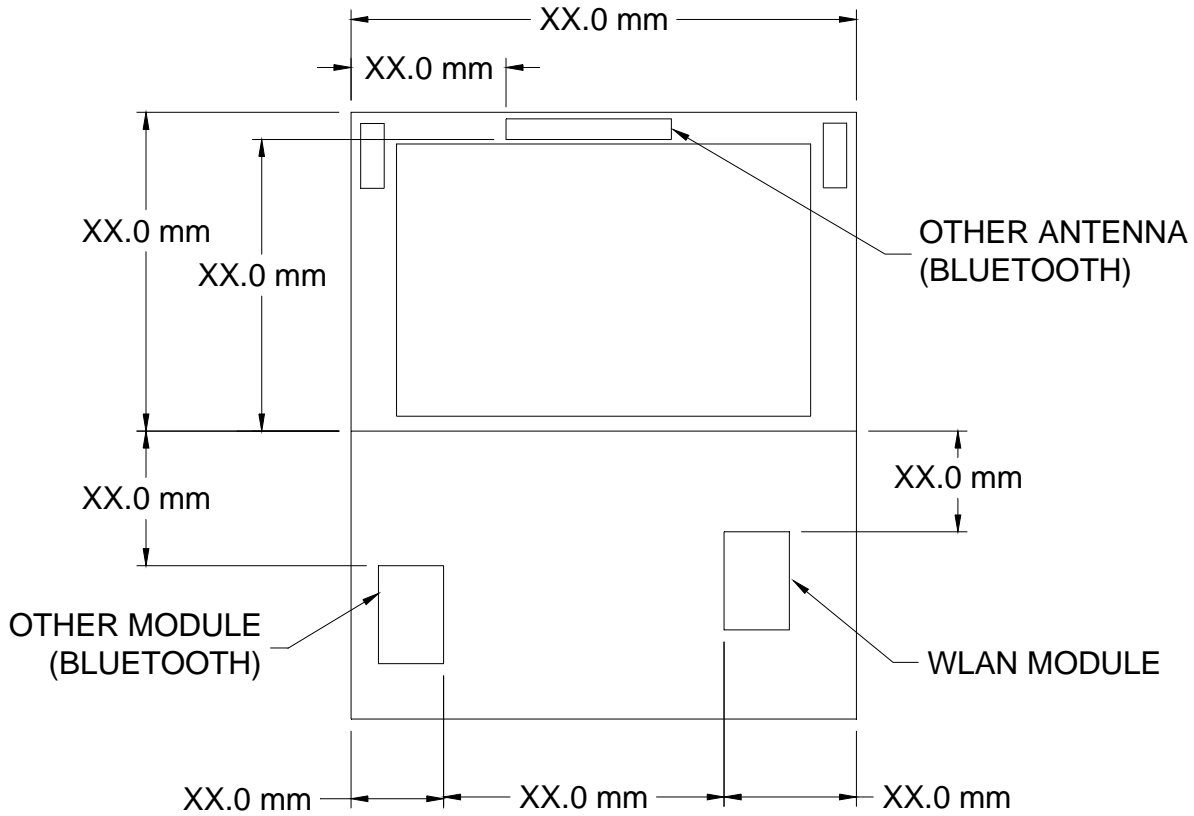




## Section 7. Diagram Example of Co-Location Antenna Separation

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between WLAN antenna and 2<sup>nd</sup> 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
<b>Argentina</b>						
<b>Brazil</b>						
<b>Indonesia</b>						
<b>Israel</b>						
<b>Malaysia</b>						
<b>Mexico</b>						
<b>Singapore</b>						Telecommunication Equipment Dealer License Required
<b>USA, Canada</b>						