

Regulatory WLAN Antenna Information(Template)

(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)

Platform information												
Brand	ODM	Platform model name	Platform type (ex: regular NB, convertible PC, AIO...etc)	SAR minimum separation (mm)								
Lenovo	3nod	Lenovo Miix 520-12IKB	NB&Tablet computer	0								
Antenna information								Peak gain w/ cable loss (dBi)				
Vendor	Type	Antenna Part number (Main)	Antenna Part number (Aux)	2.4GHz	5.2GHz	5.5GHz	5.8GHz					
INPAQ	PIFA	64451203900050	64451203900060	2.44	1.83	2.11	0.75					
Module information (Pls check with "x" when applies, or to fill-in proper model in empty column)												
Model	Form factor and suffixes											
3165		NGW										
8265 (WP 2)		NGW										
Intel Reference Gain/Type/ Separation distance												
Antenna Type	Antenna Peak gain (In dBi)				Distance to the end user (mm)							
	2.4GHz	5.2GHz	5.5GHz	5.8GHz								
PIFA	2.44	1.83	2.11	0.75	>8 (generic sku) >5 (low power sku)							
Notes (marked with •)												
• SAR minimum separation (mm)												
- Regular NB: Minimum antenna-to-body (from antenna bottom to the bottom of the device)												
- Tablet / Convertible PC: Minimum antenna-to-edge (5 sides of the device)												

**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 antenna (Peak Gain W/ cable loss)*	Required	Required	Required	Required	Required
	1E OR 1F, 1G, 1H					
1F	Tx1, Tx2 antenna (Peak Gain only)*	Required	Required	Required	Required	Required
1G	VSWR of cable including connector	Required	Required	Required	Required	Required
1H	Tx1, Tx2 antenna (Cable loss W/ connector)*	Required	Required	Required	Required	Required
2	Dimensioned Photographs and Drawings of Tx1, Tx2 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	<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

Antenna Information

Section 1.Antenna Assembly Specifications

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: 64451203900050) Tx1/ Rx1 Antenna	Example: Intel Corporation	Example: Folded Dipole or Monopole or PIFA	Example: (P/N: WA-P-LB-02-480) 50 ohm Coaxial length:11.8cm diameter: 0.81mm	2400-2500MHz 2.44dBi (peak)	2400-2500MHz 2. 2.87 dBi (peak)	2400-2500MHz 2.5 max	2400-2500MHz 0.43 dBi (peak)
				5150-5350MHz 1.49dBi (peak)	5150-5350MHz 2.1 dBi (peak)	5150-5350MHz 2.5 max	5150-5350MHz 0.61dBi (peak)
				5470-5725MHz 1.13dBi (peak)	5470-5725MHz 1.77 dBi (peak)	5470-5725MHz 2.5 max	5470-5725MHz 0.64dBi (peak)
				5725-5850MHz -0.73dBi (peak)	5725-5850MHz -0.04dBi (peak)	5725-5850MHz 2.5 max	5725-5850MHz 0.69dBi (peak)
(P/N: 64451203900060) Tx2/ Rx2 Antenna	Example: Intel Corporation	Example: Folded Dipole or Monopole or PIFA	Example: (P/N: WA-P-LB-03-087) 50 ohm Coaxial length: 28.1cm diameter: 0.81mm	2400-2500MHz 2.35dBi (peak)	2400-2500MHz 3.37dBi (peak)	2400-2500MHz 2.5 max	2400-2500MHz 1.02dBi (peak)
				5150-5350MHz 1.83dBi (peak)	5150-5350MHz 3.28dBi (peak)	5150-5350MHz 2.5max	5150-5350MHz 1.45 dBi (peak)
				5470-5725MHz 2.11dBi (peak)	5450-5725MHz 3.62 dBi (peak)	5470-5725MHz 2.5 max	5470-5725MHz 1.51 dBi (peak)
				5725-5850MHz 0.75dBi (peak)	5725-5850MHz 2.39dBi (peak)	5725-5850MHz 2.5 max	5725-5850MHz 1.64dBi (peak)

- Antenna Peak Gain required being test tenna gain include H/V

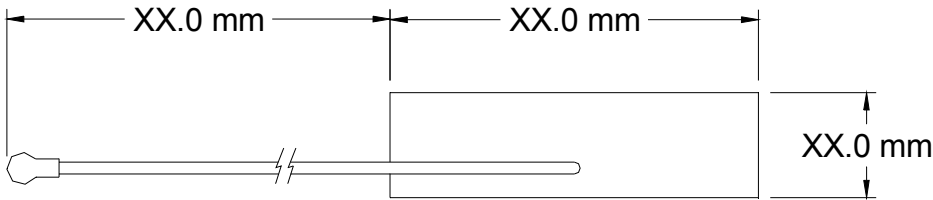
AntennaEfficiency& Peak Gain Table:

	Tx1 antenna		Tx2 (or Rx2) Antenna	
Frequency (MHz)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)
2400	45.23	1.06	41.75	2.35
2450	46.96	1.68	43.88	2.3
2500	45.46	2.44	42	2.31
5100	46.9	1.49	36.22	0.94
5200	45.9	1.05	36.15	1.35
5300	45.09	0.13	37.44	1.83
5450	44.48	1.13	37.08	2.11
5600	42.85	-0.05	38.97	1.39
5700	42.09	-1.01	37.52	0.75
5800	41.57	-1.87	36.24	0.56
5900	40.42	-0.73	35.92	1.4

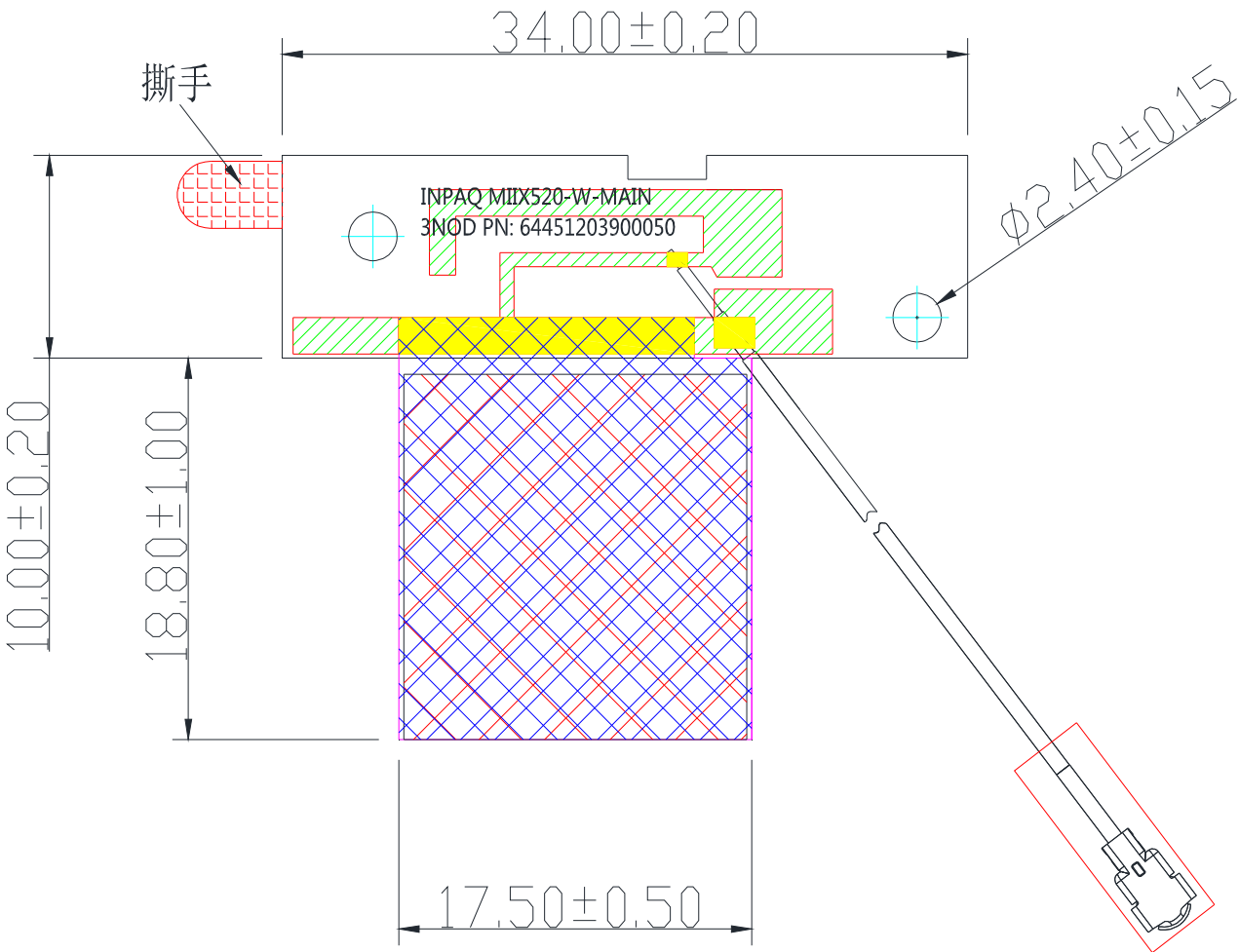
Section 2.Dimensioned Photos or Drawings of Antennas

Includea dimensioned photo and dimensioned drawing of Tx1antenna here.

Tx1 Antenna Dimensioned Drawing:

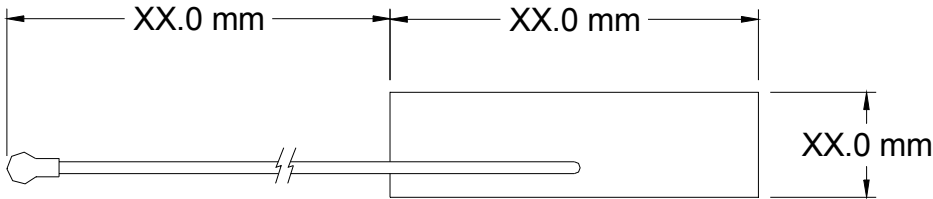


Tx1 Antenna Photo:

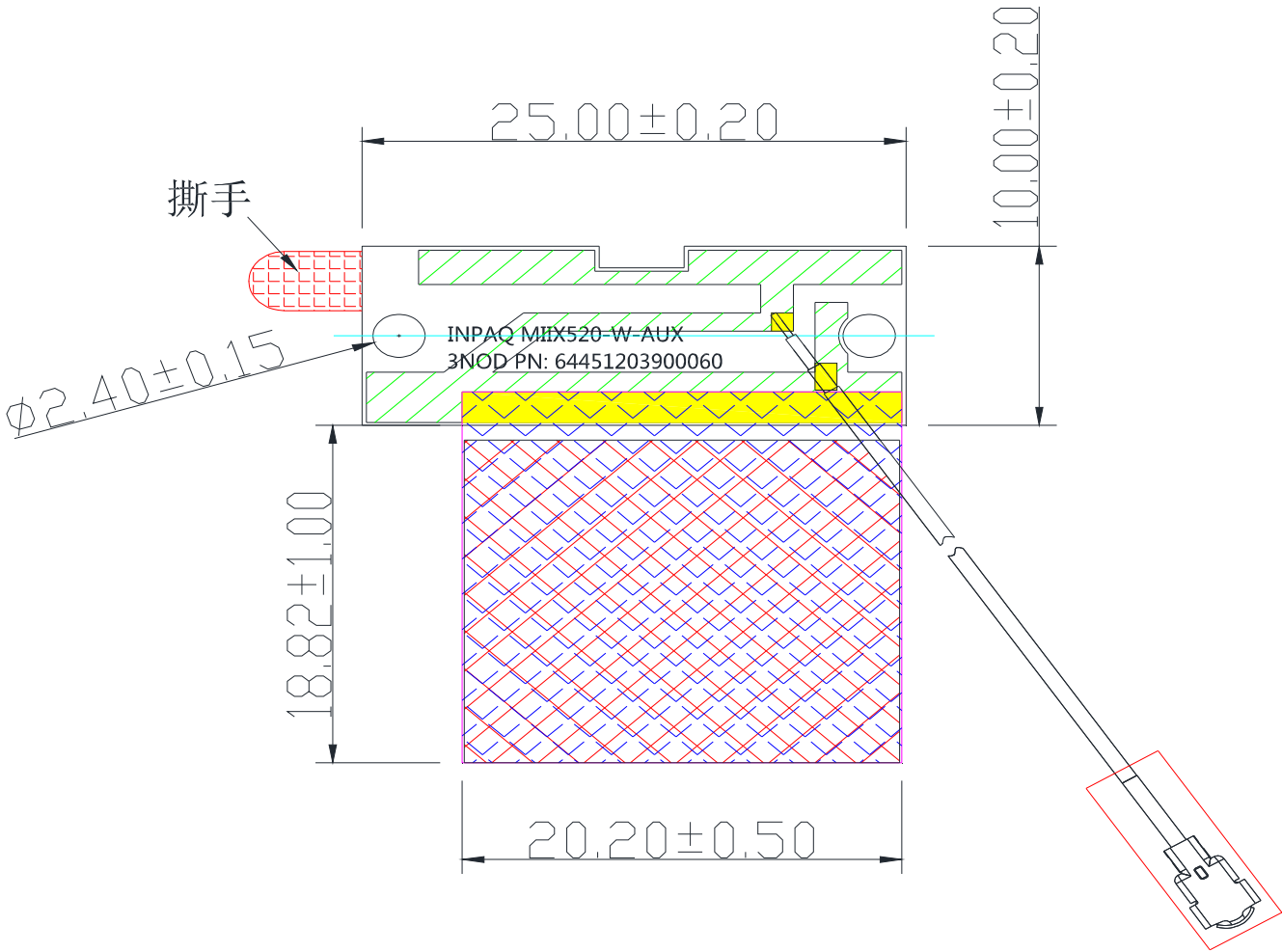


Include a dimensioned photo and dimensioned drawing of Tx2(or Rx2)antenna here.

Tx2(or Rx2) Antenna Dimensioned Drawing:



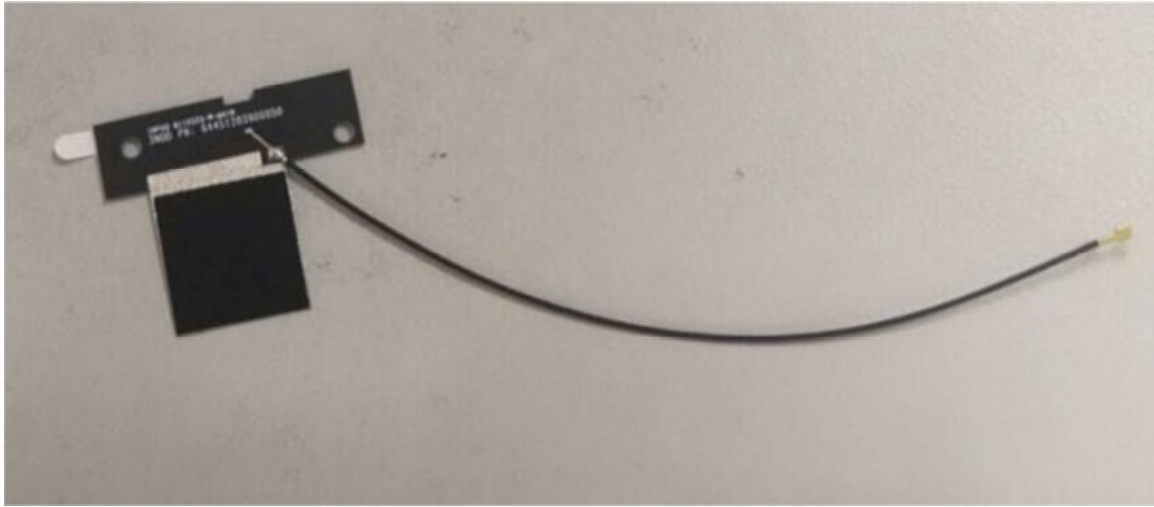
Tx2(or Rx2)Antenna Photo:



Includefront view photo of all 2antennas here.

Antenna Manufacturer: INPAQ

Antenna Part Number:, 64451203900050 (main)



Includeback view photo of all 2antennas here.

Antenna Manufacturer: INPAQ

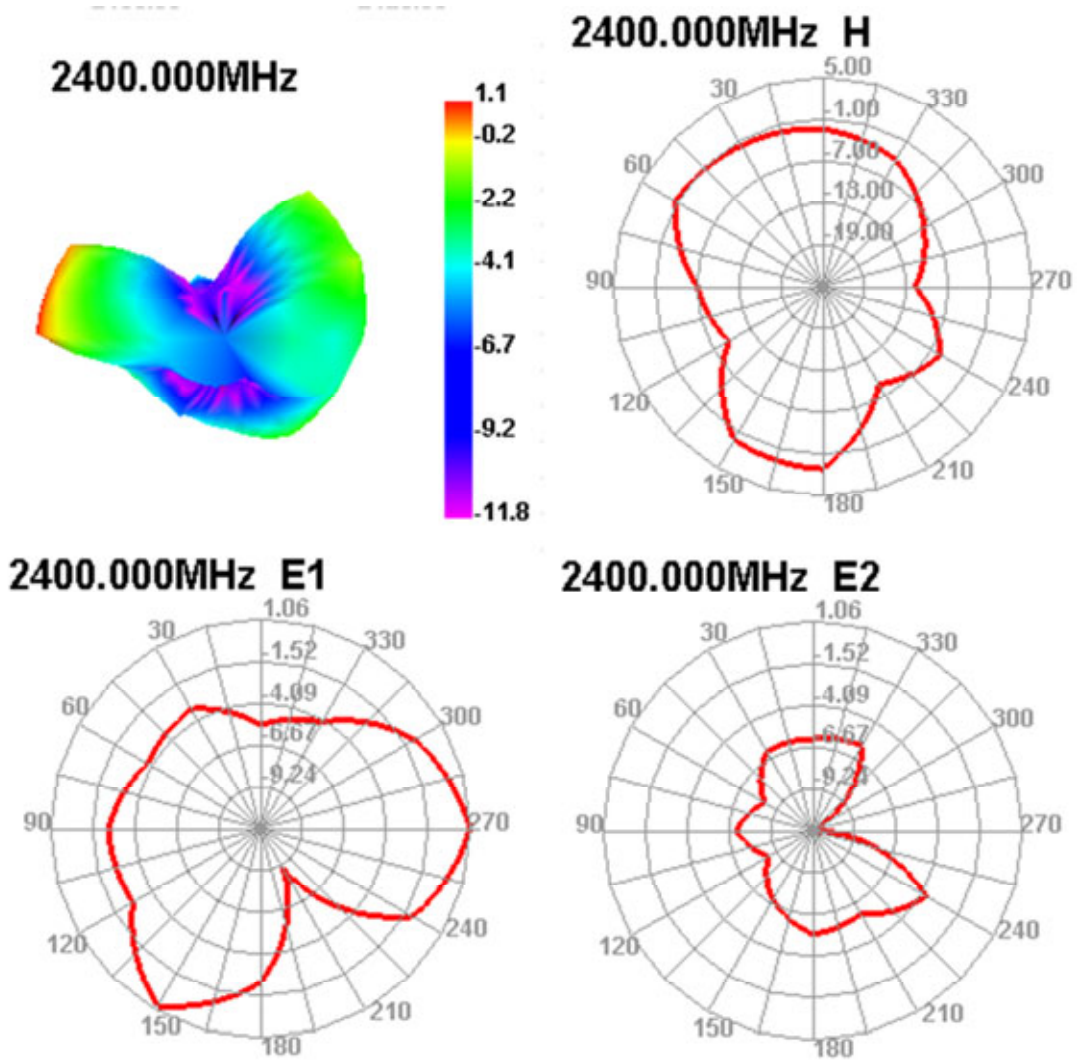
Antenna Part Number: 64451203900060 (Aux)



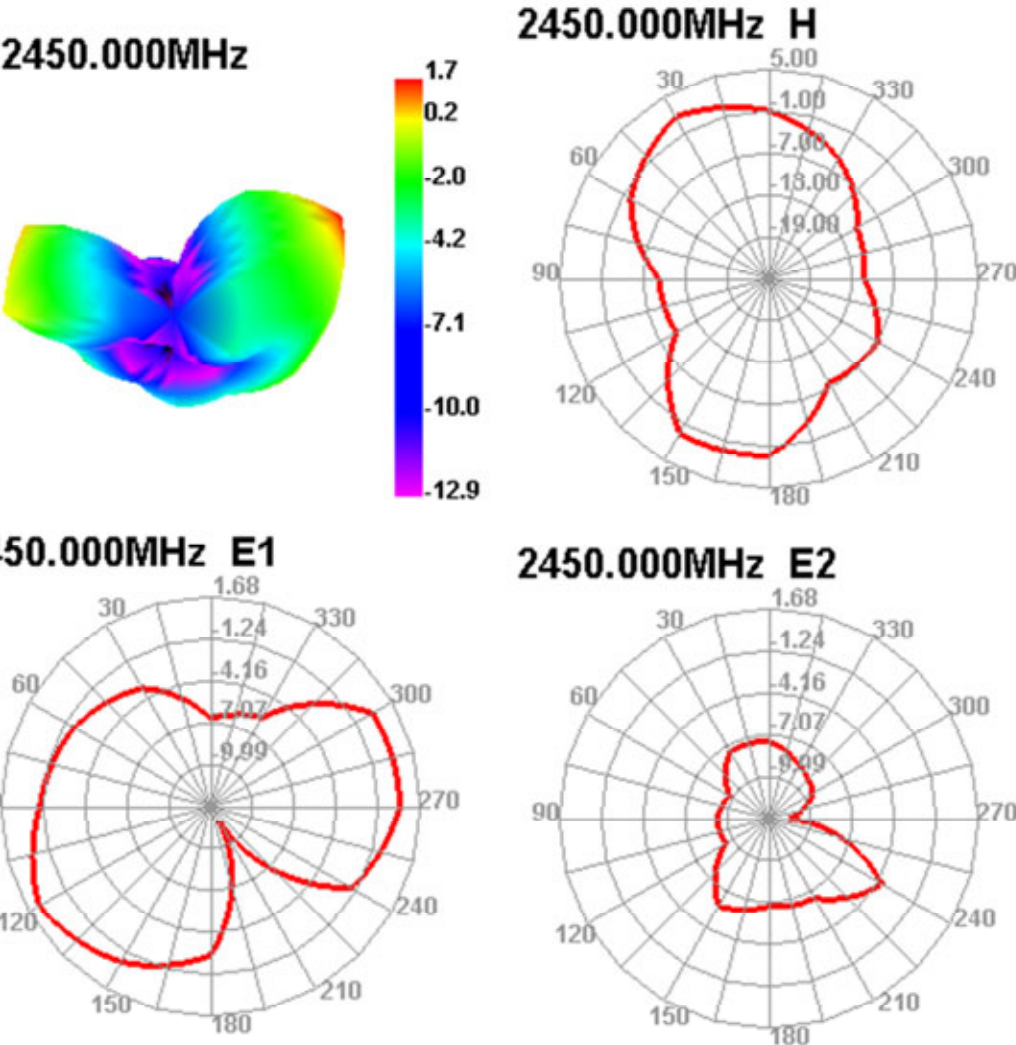
Section 3.Radiation characteristics of antennaeLoaded in Host Platform

2400-2500MHz radiation characteristic

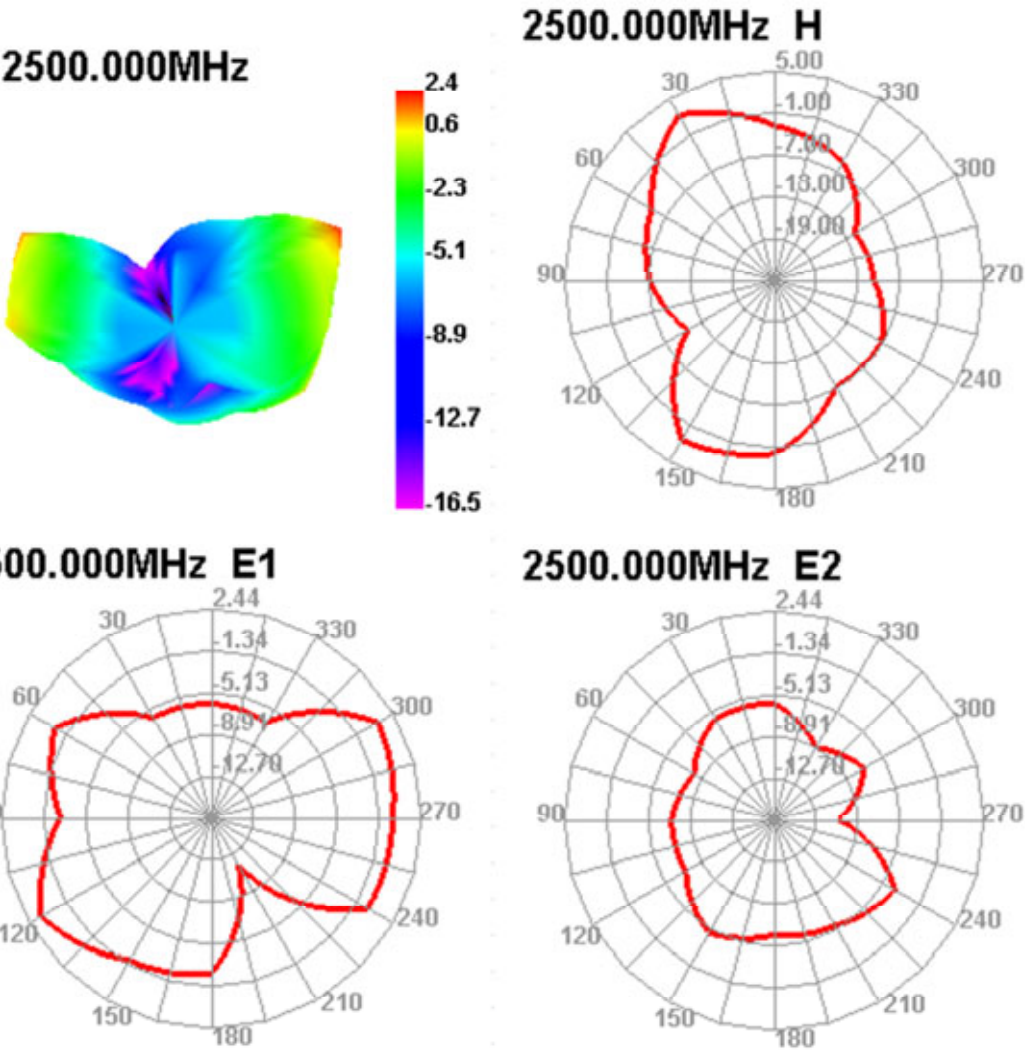
Tx1 antenna: 2400 MHz



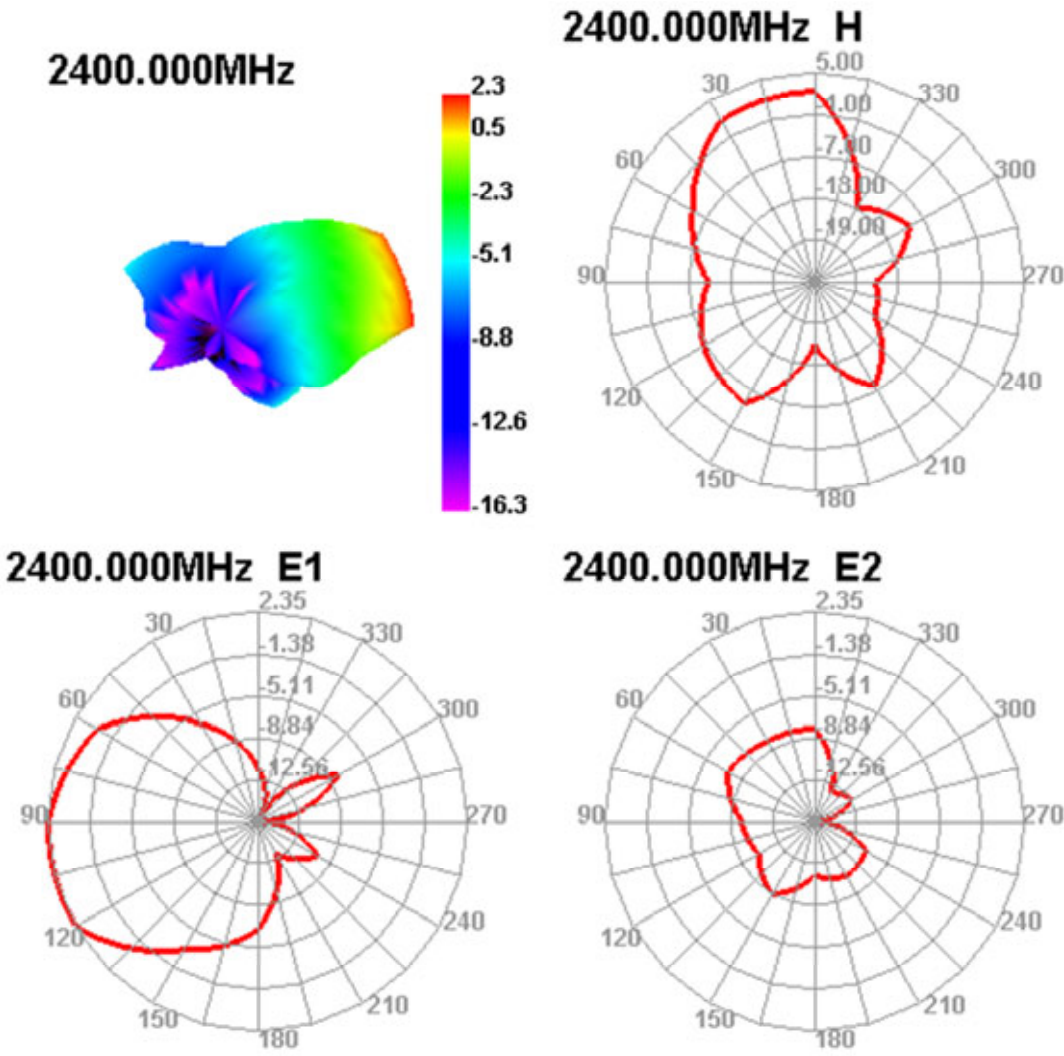
Tx1 antenna: 2450 MHz



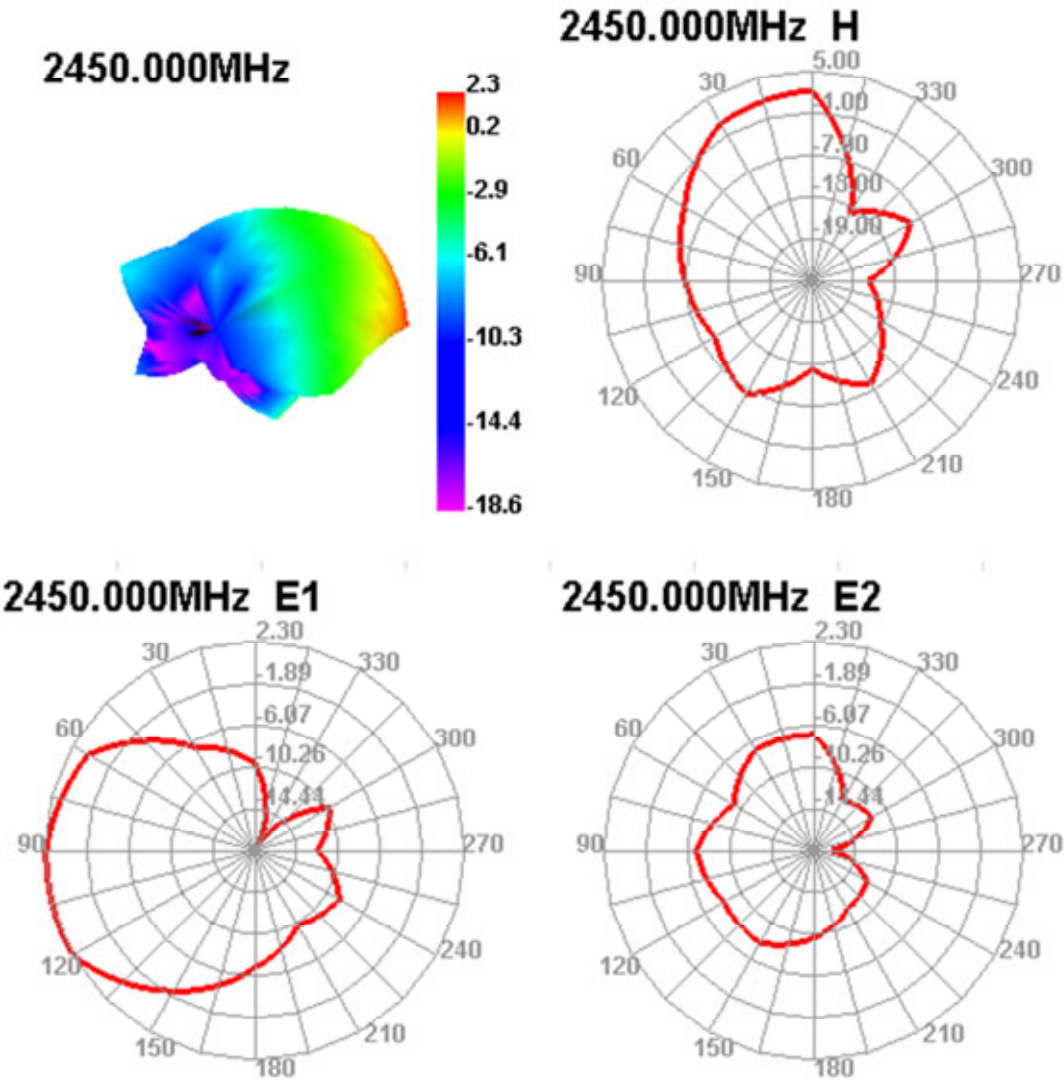
Tx1 antenna: 2500 MHz



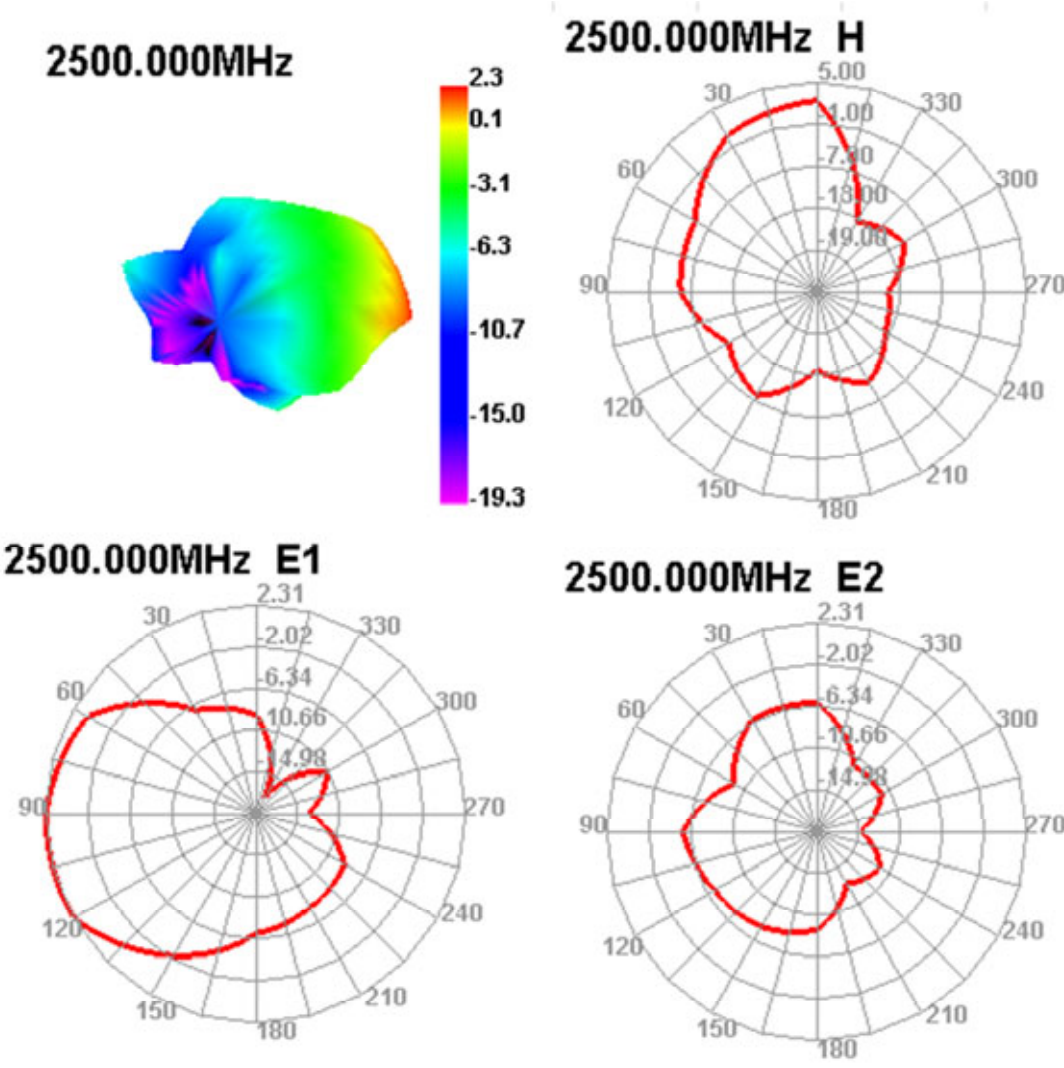
Tx2(or Rx2) antenna: 2400 MHz(Plot is not required if 2nd Antenna is receive only e.g. Rx2 for 512 family)



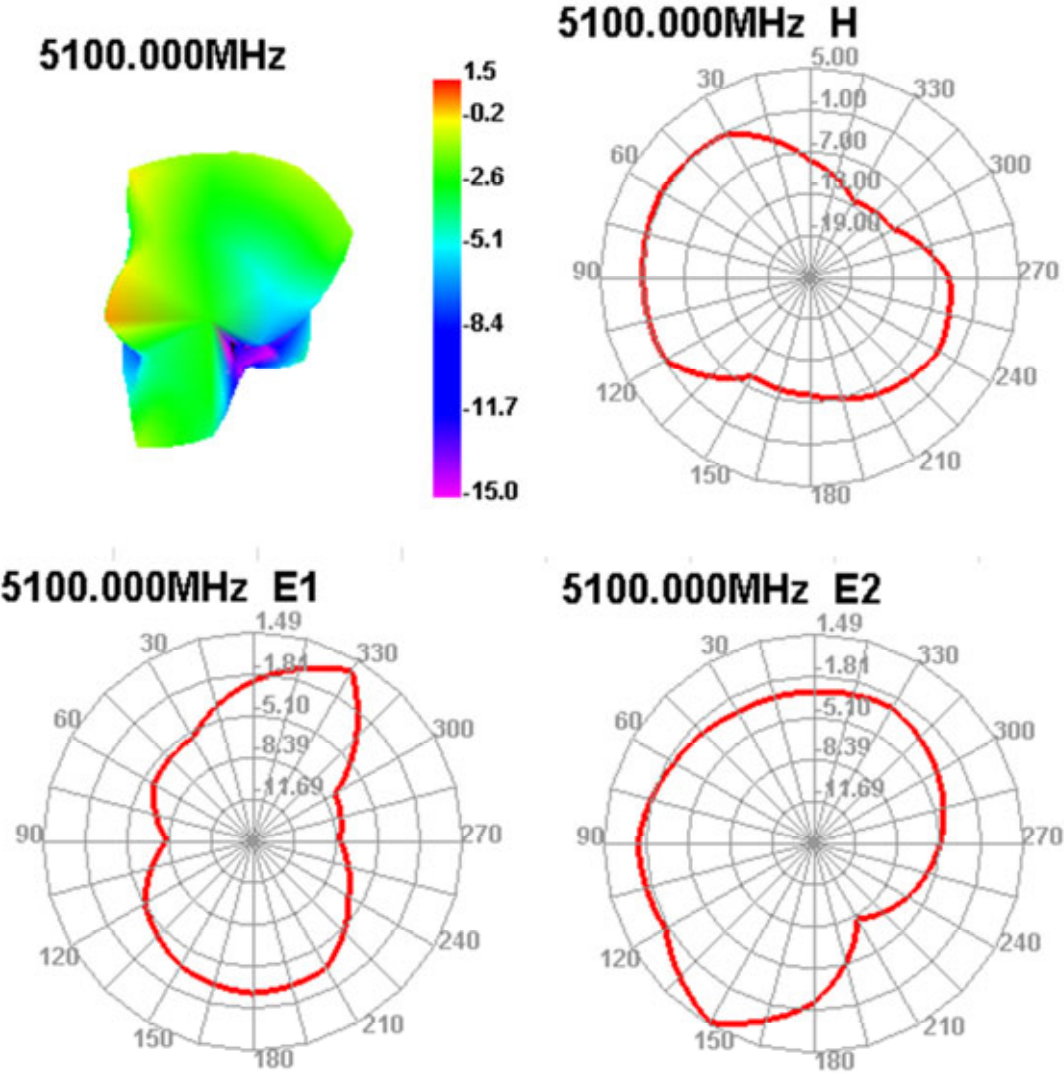
Tx2(or Rx2)antenna: 2450 MHz(Plot is not required if 2nd Antenna is receive only e.g. Rx2 for 512 family)



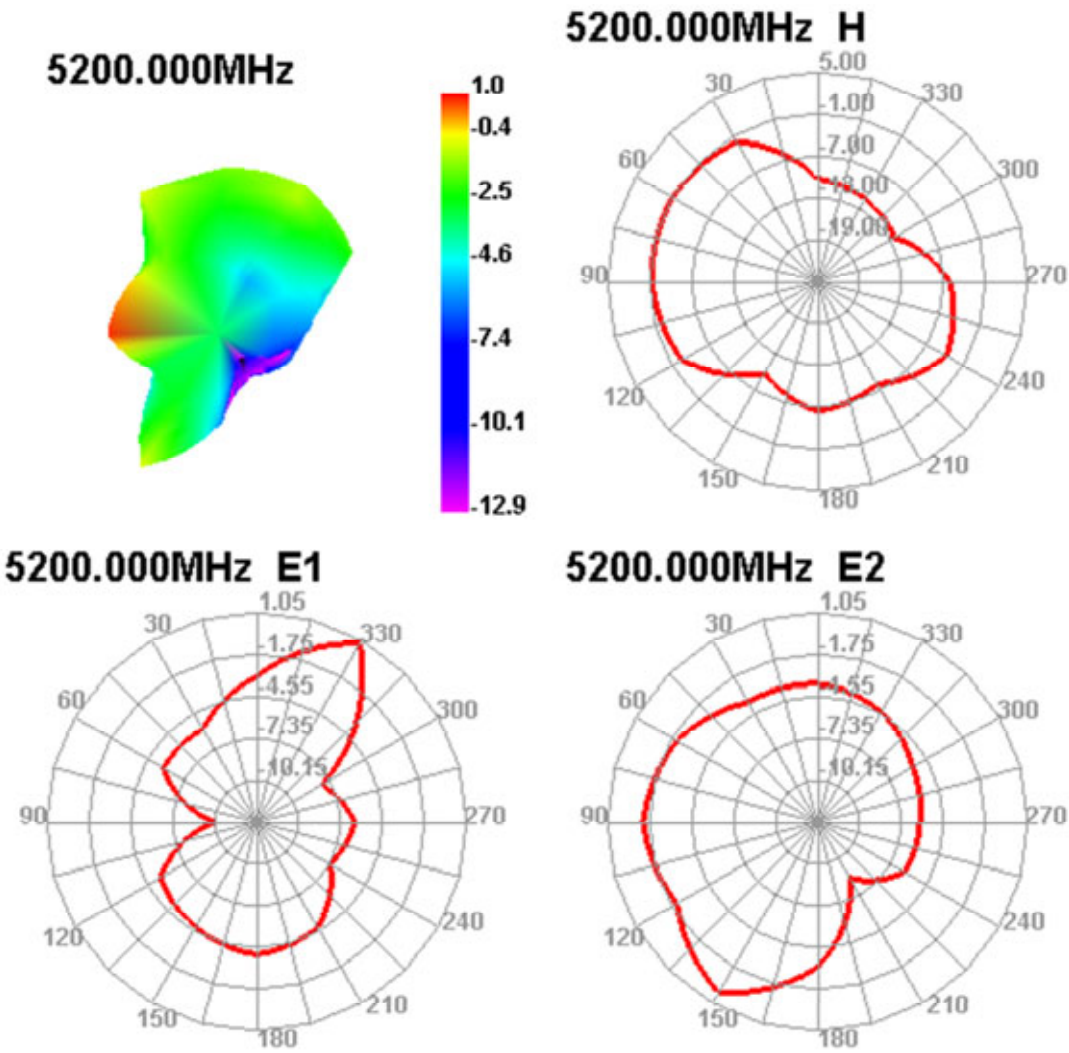
Tx2(or Rx2)antenna: 2500 MHz(Plot is not required if 2nd Antenna is receive only e.g. Rx2 for 512 family)

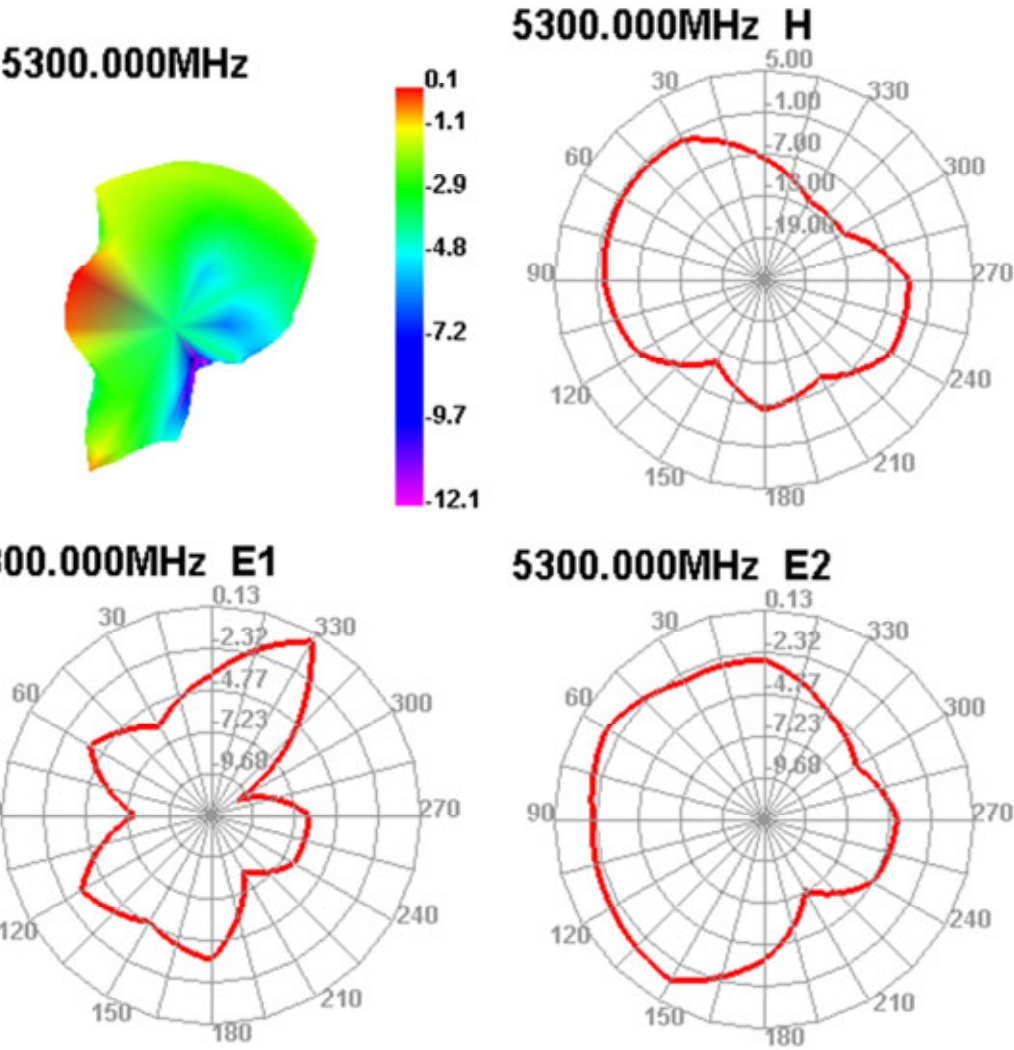


Tx1 antenna: 5100 MHz

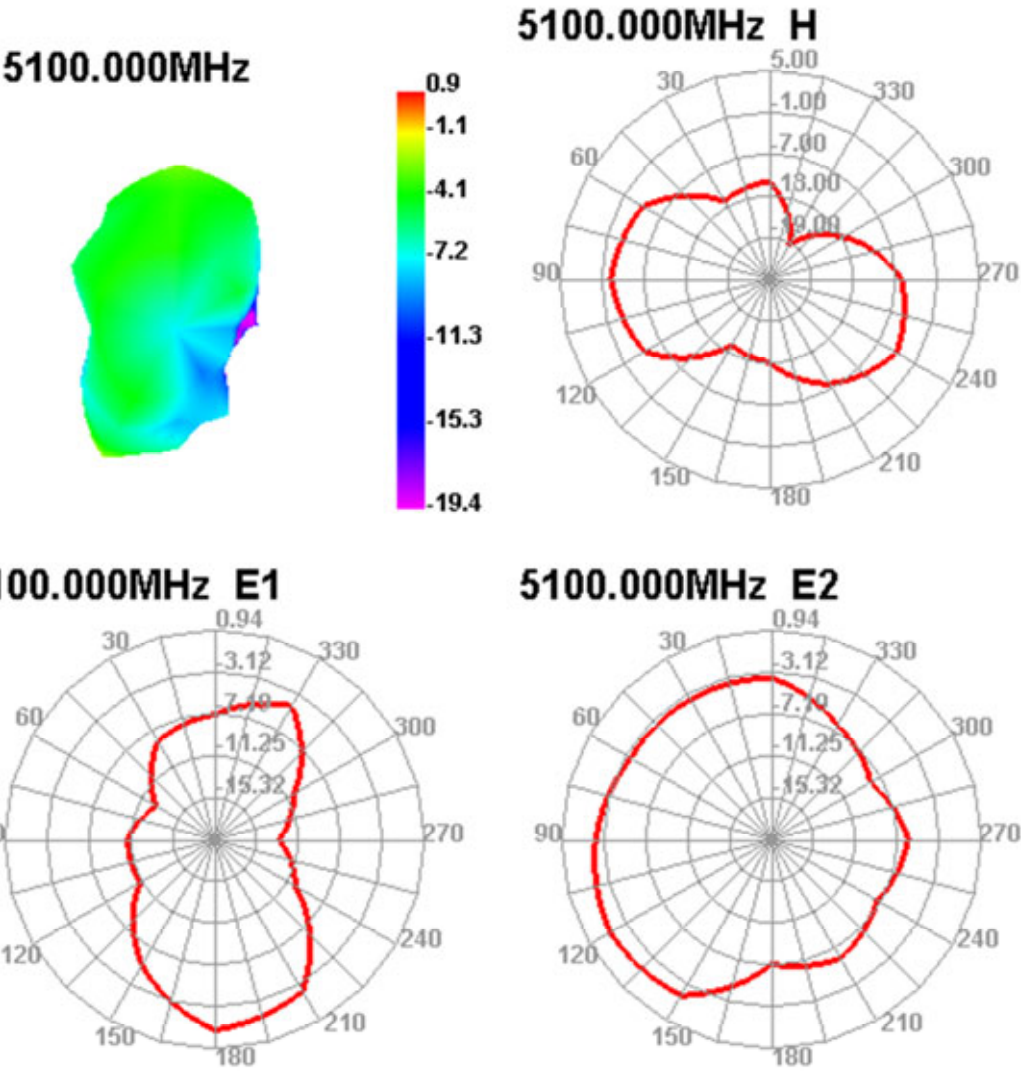


Tx1 antenna: 5200 MHz

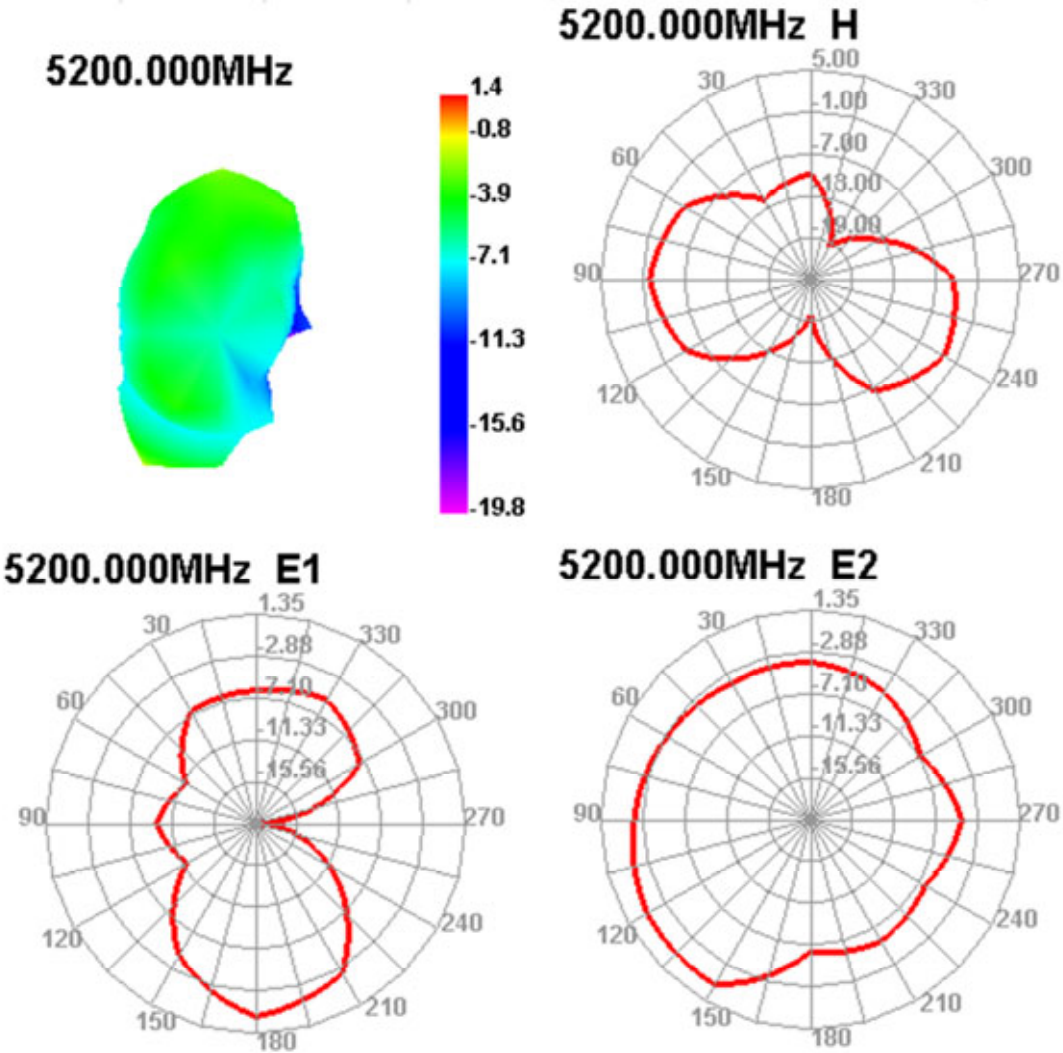




Tx2(or Rx2)antenna: 5100 MHz(Plot is not required if 2nd Antenna is receive only e.g. Rx2 for 512 family)



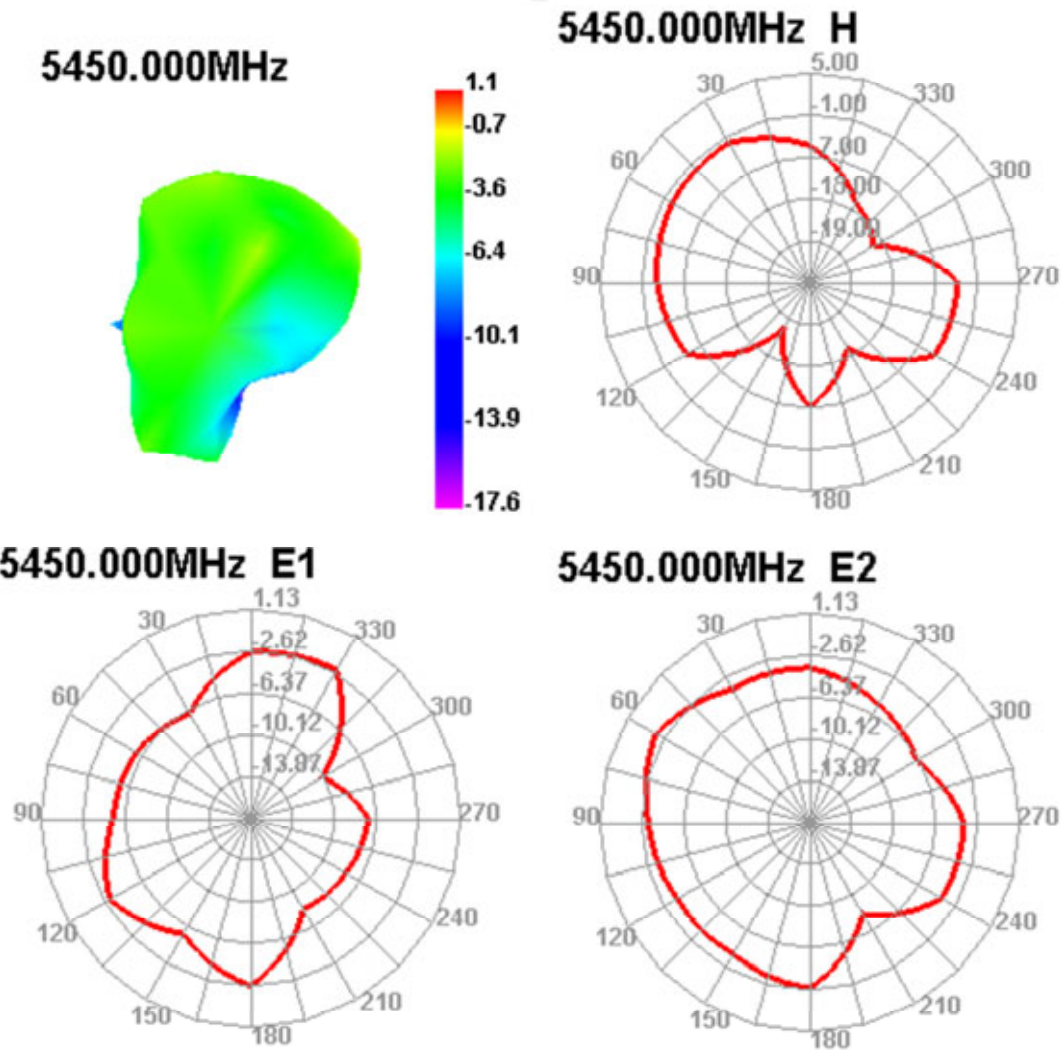
Tx2(or Rx2)antenna: 5200 MHz(Plot is not required if 2nd Antenna is receive only e.g. Rx2 for 512 family)



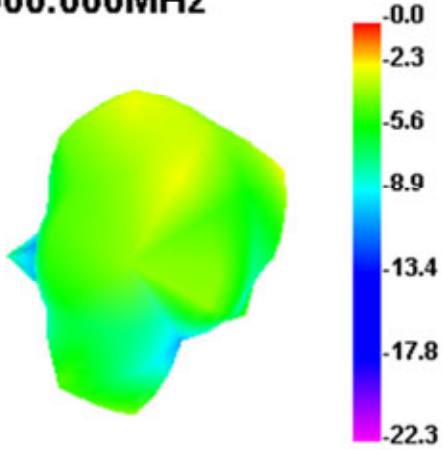


5450-5700MHz radiation characteristic

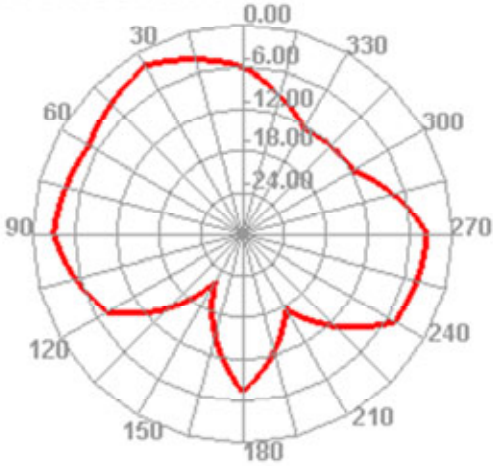
Tx1 antenna: 5450 MHz



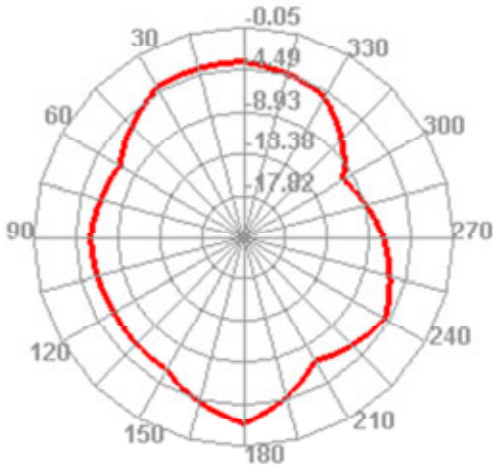
5600.000MHz



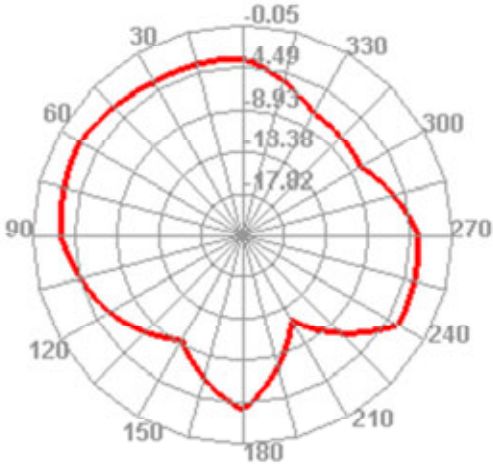
5600.000MHz H



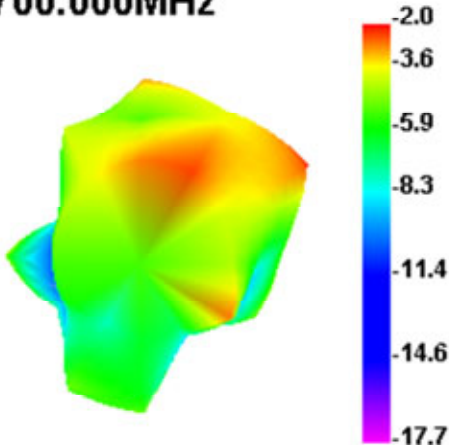
5600.000MHz E1



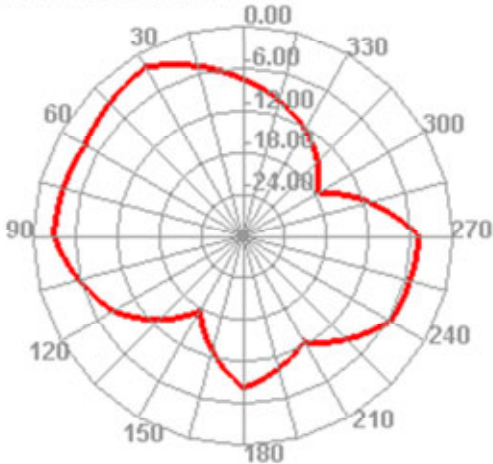
5600.000MHz E2



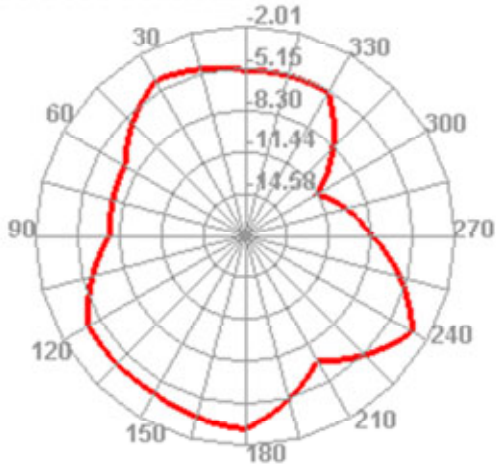
5700.000MHz



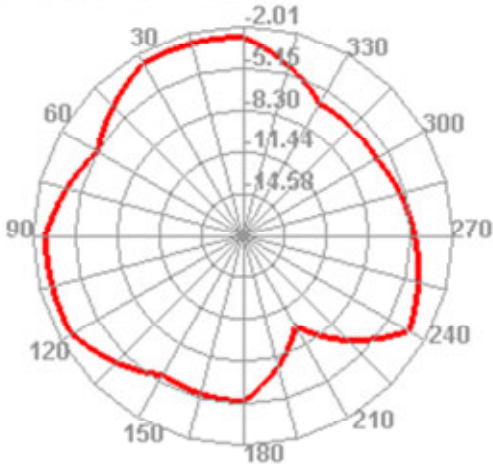
5700.000MHz H



5700.000MHz E1

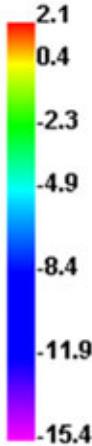
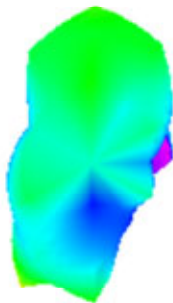


5700.000MHz E2

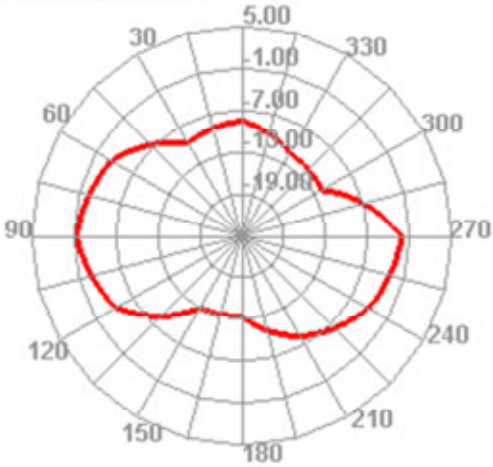


Tx2(or Rx2)antenna: 5450 MHz(Plot is not required if 2nd Antenna is receive only e.g. Rx2 for 512 family)

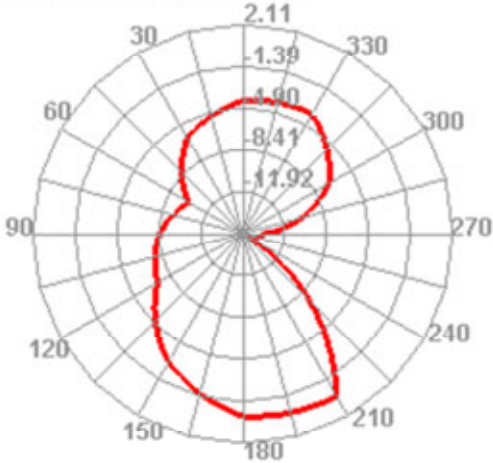
5450.000MHz



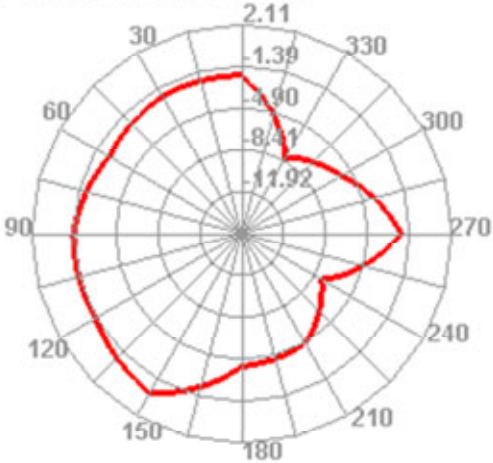
5450.000MHz H



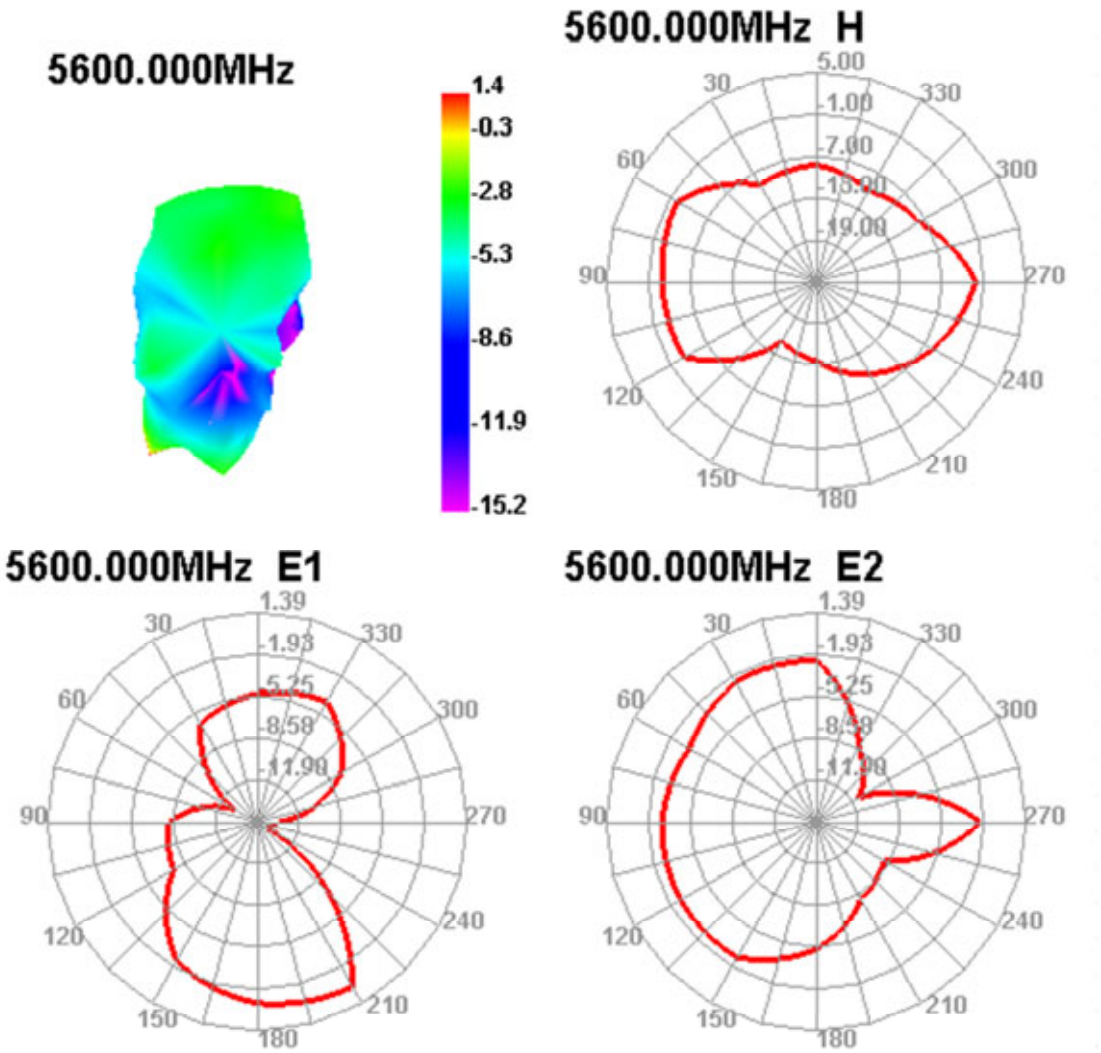
5450.000MHz E1



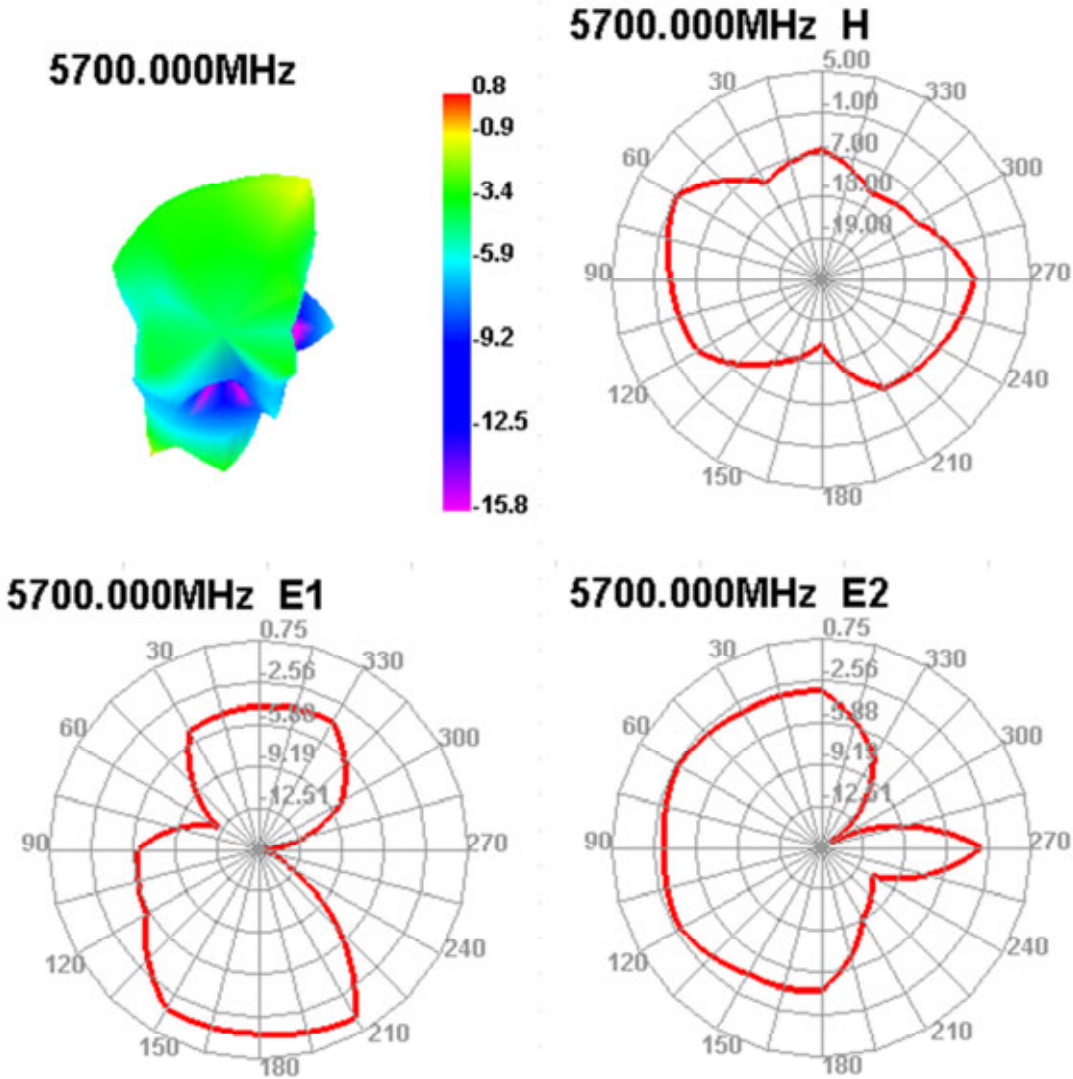
5450.000MHz E2



Tx2(or Rx2)antenna: 5600 MHz(Plot is not required if 2nd Antenna is receive only e.g. Rx2 for 512 family)

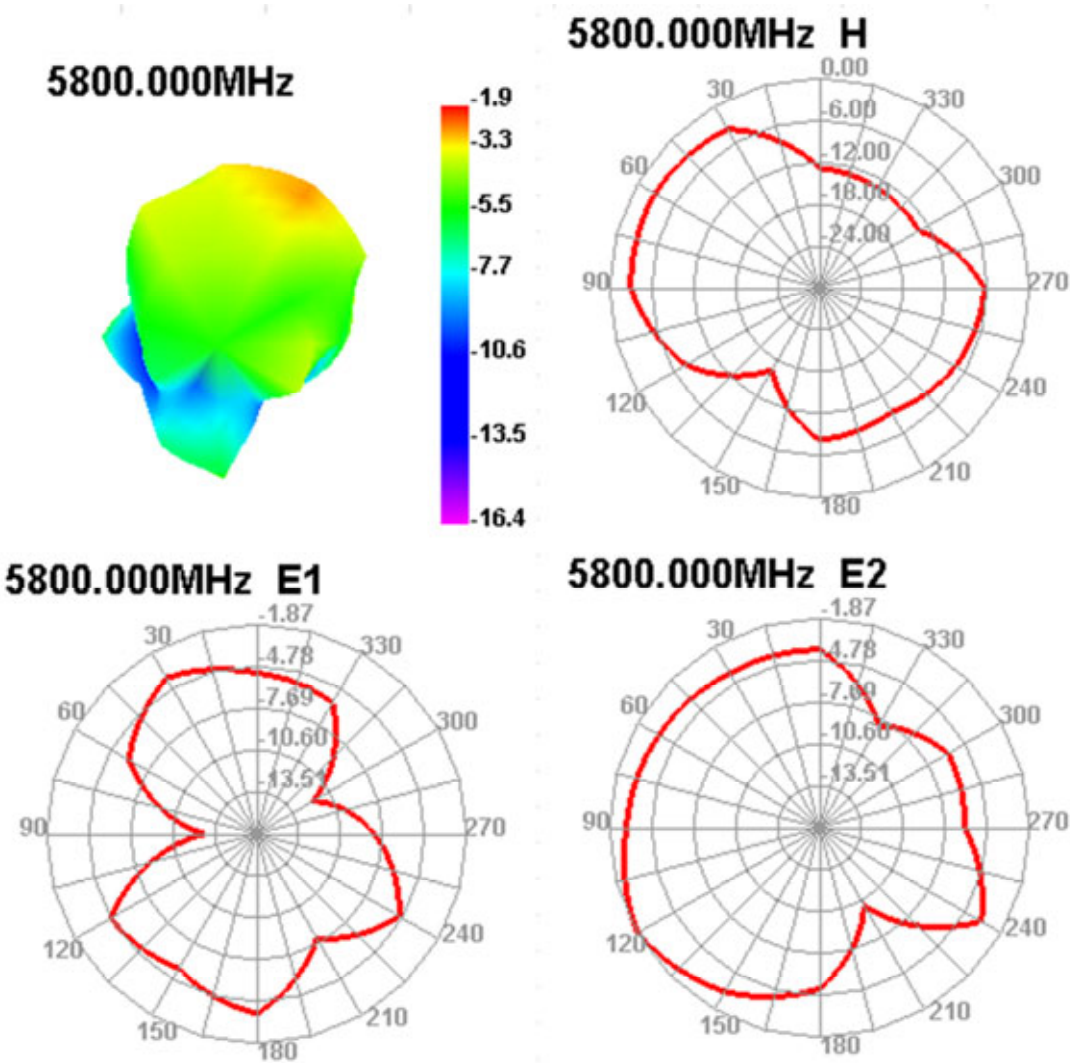


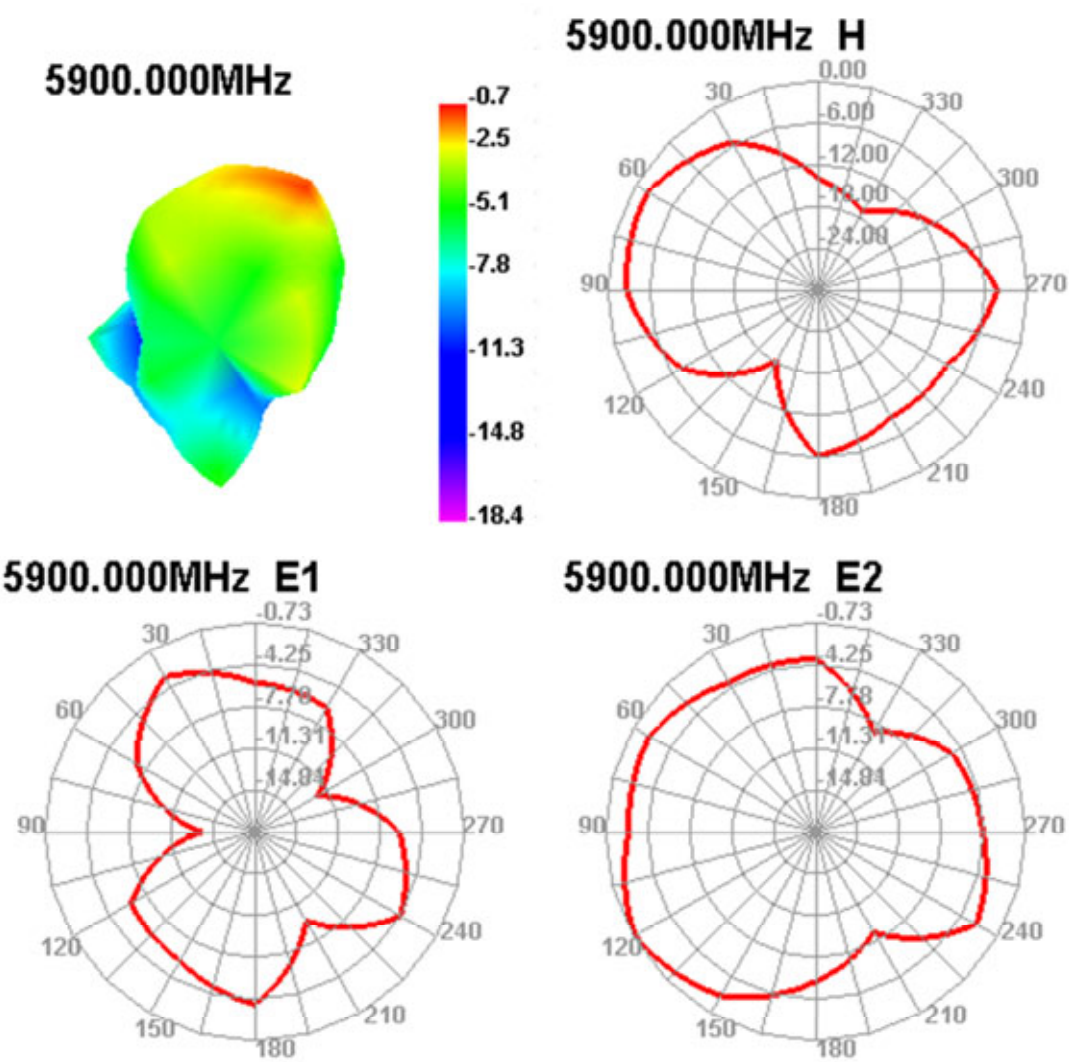
Tx2(or Rx2)antenna: 5700 MHz(Plot is not required if 2nd Antenna is receive only e.g. Rx2 for 512 family)



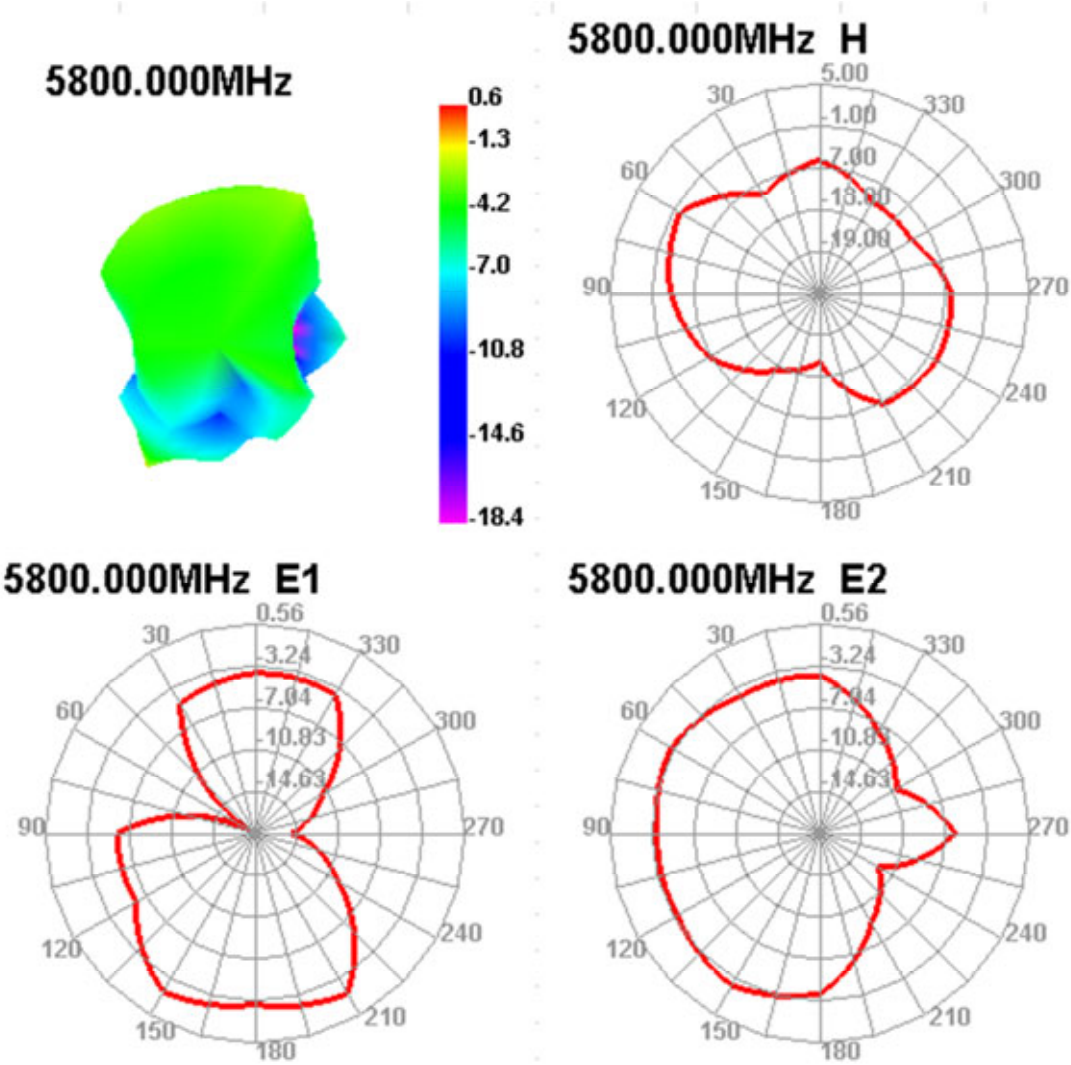
5800-5900 MHz radiation characteristic

Tx1 antenna: 5800 MHz

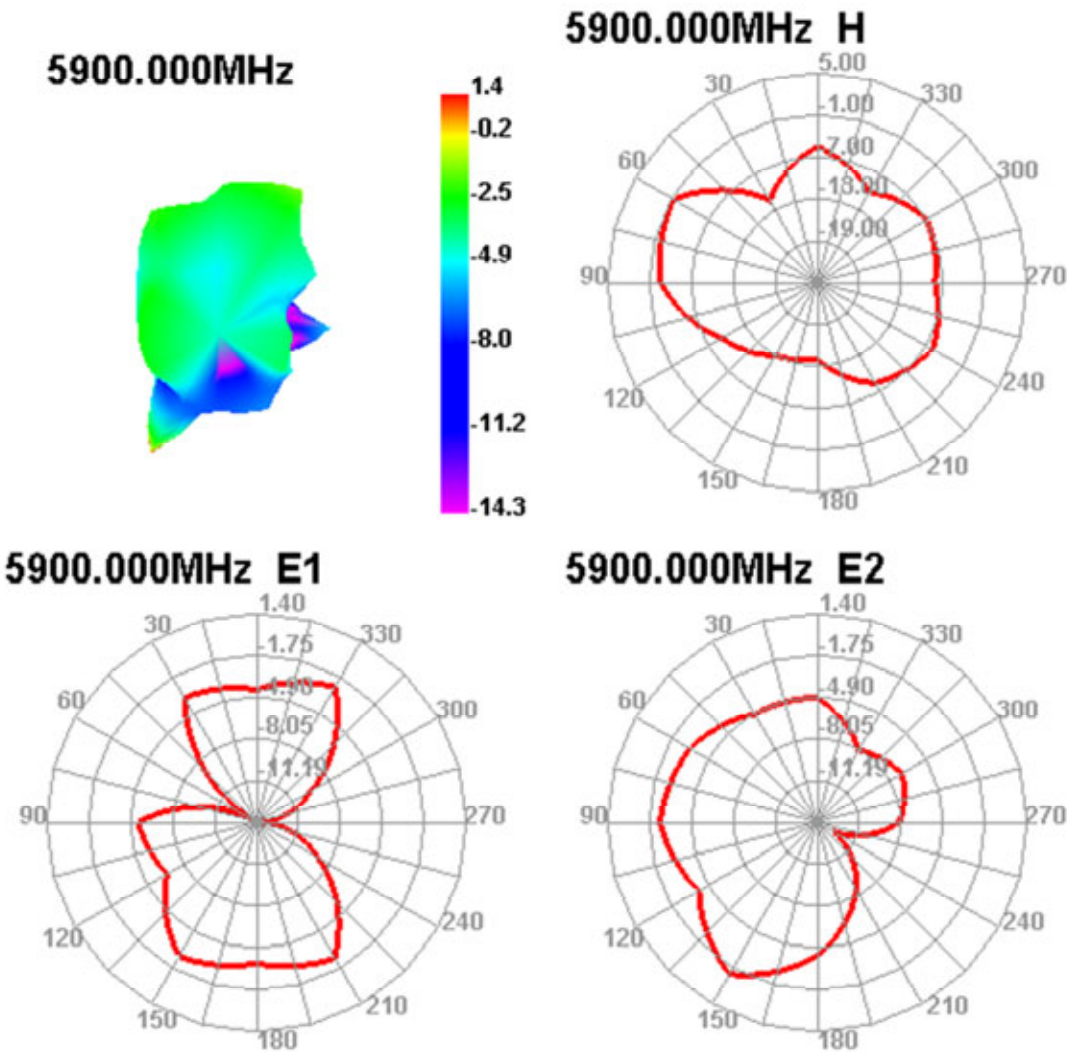




Tx2(or Rx2)antenna: 5800 MHz(Plot is not required if 2nd Antenna is receive only e.g. Rx2 for 512 family)



Tx2(or Rx2)antenna: 5900 MHz(Plot is not required if 2nd Antenna is receive only e.g. Rx2 for 512 family)



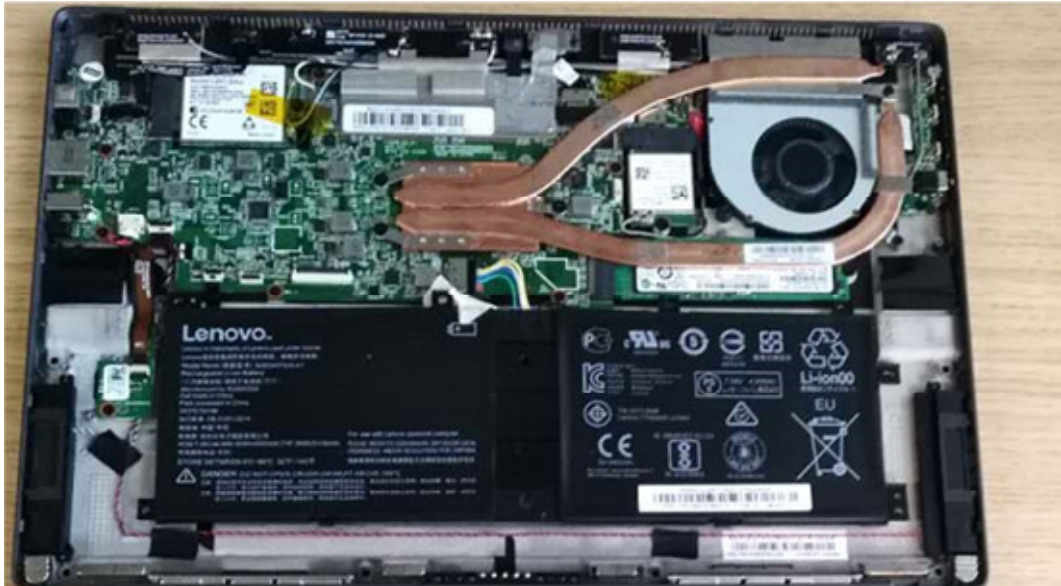
Section 4. Host Platform Information

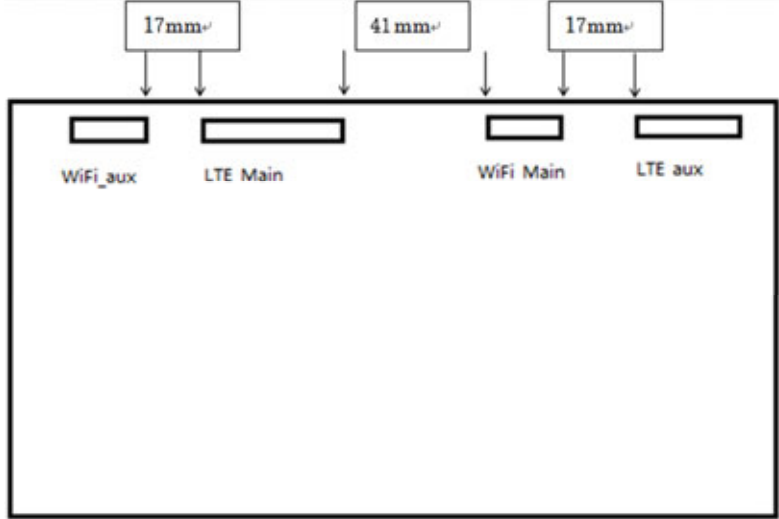
OEM / ODM Host platform: (XXXXXXX)platform correlated to antenna data
Rating Label Photo:



Section 5. Antenna Host Platform Location Information

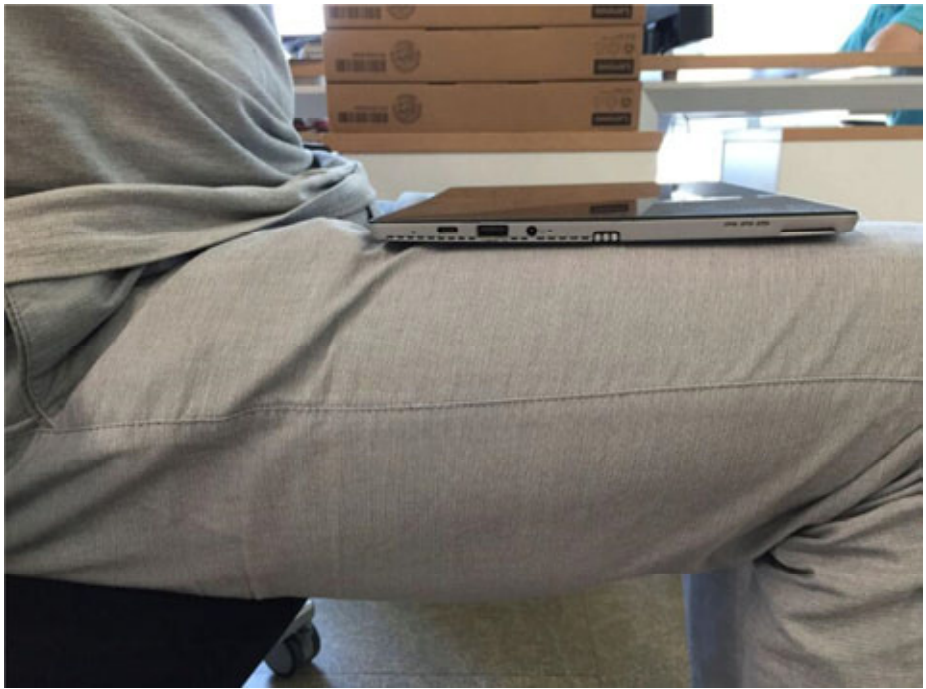
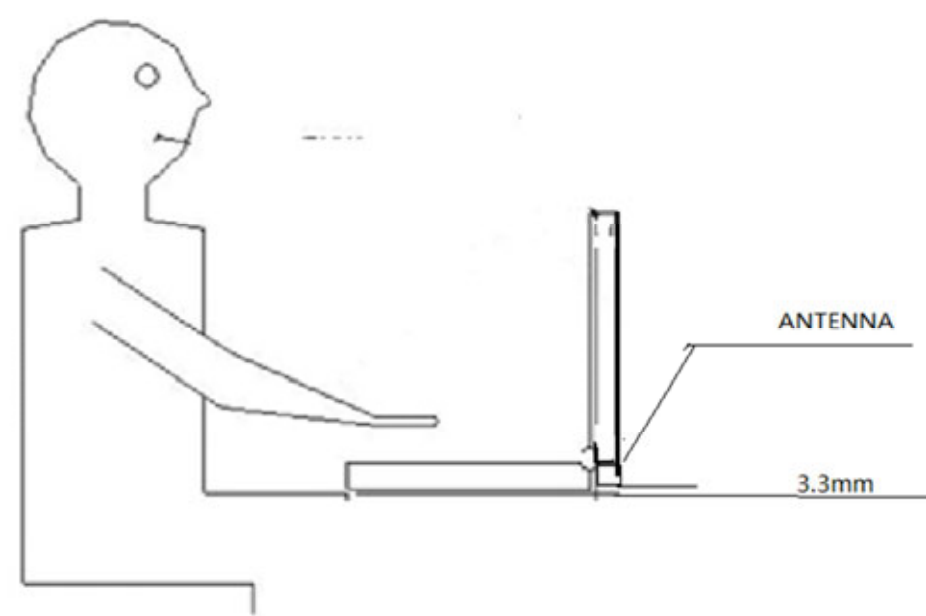
Include a dimensioned photo(s) or dimensioned drawing(s) of Tx1, Tx2 and Tx3 antenna placements (measurements are not required for receive-only antenna). Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.





Section 6. Antenna dimensional information for SAR evaluation

Include a **dimensioned photo(s) or dimensioned drawing(s)** showing the distance (mm) between the transmit antennas and the user (excluding hands, wrist, feet, and ankle). For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary landscape positions. Include a description of any proximity sensors or power throttling implementations that limit or exclude use of any host orientation.



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)

