

Regulatory WLAN Antenna Information

TIAN01

Antenna Sample / Antenna Data Requirements for worldwide regulatory approval

Section	Description of Required OEM / ODM Antenna Information	US / IC	EU	Japan	Taiwan	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 or 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.	Required	Required	Desired	Required	Desired
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

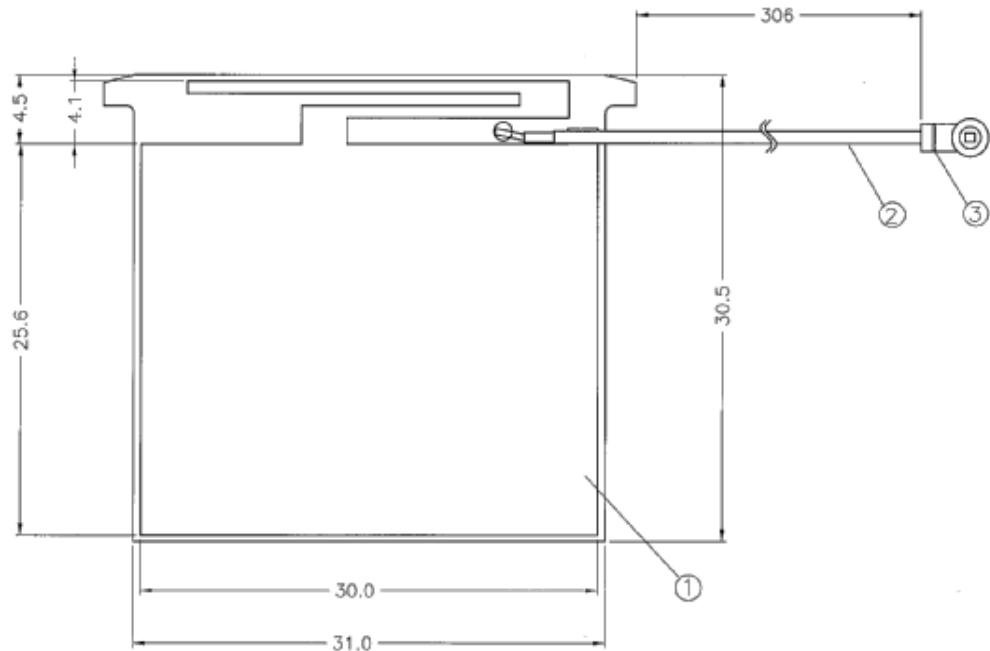
Section 1. Antenna Assembly

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)
TIAN01	Tyco Electronics AMP K.K.	2.4GHz:PIFA 5GHz:PIFA	P/N:TIAN01-001 50 ohm Coaxial. length: 306mm diameter: 0.95mm Connector: U.FL or equivalent	2400-2500MHz -0.8 dBi (peak)	2400-2500MHz 0.2 dBi (peak)	2400-2500MHz 2.58 max	2400-2500MHz 0.91 dBi (peak)
				5150-5350MHz -1.0 dBi (peak)	5150-5350MHz 0.2 dBi (peak)	5150-5350MHz 1.96 max	5150-5350MHz 1.16 dBi (peak)
				5470-5725MHz -1.2 dBi (peak)	5470-5725MHz 0 dBi (peak)	5470-5725MHz 2.62 max	5470-5725MHz 1.18 dBi (peak)
				5725-5850MHz -2.7 dBi (peak)	5725-5850MHz -1.5 dBi (peak)	5725-5850MHz 2.55 max	5725-5850MHz 1.19 dBi (peak)
TIAN01	Tyco Electronics AMP K.K.	2.4GHz:PIFA 5GHz:PIFA	P/N:TIAN01-001 50 ohm Coaxial. length: 306mm diameter: 0.95mm Connector: U.FL or equivalent	2400-2500MHz -0.3 dBi (peak)	2400-2500MHz 0.6 dBi (peak)	2400-2500MHz 2.99 max	2400-2500MHz 0.91 dBi (peak)
				5150-5350MHz -0.4 dBi (peak)	5150-5350MHz 0.7 dBi (peak)	5150-5350MHz 2.17 max	5150-5350MHz 1.16 dBi (peak)
				5470-5725MHz -1.1 dBi (peak)	5470-5725MHz 0.1 dBi (peak)	5470-5725MHz 2.89 max	5470-5725MHz 1.18 dBi (peak)
				5725-5850MHz -1.1 dBi (peak)	5725-5850MHz 0.1 dBi (peak)	5725-5850MHz 2.86 max	5725-5850MHz 1.19 dBi (peak)

Section 2. Dimensioned Photos or Drawings of Antennas

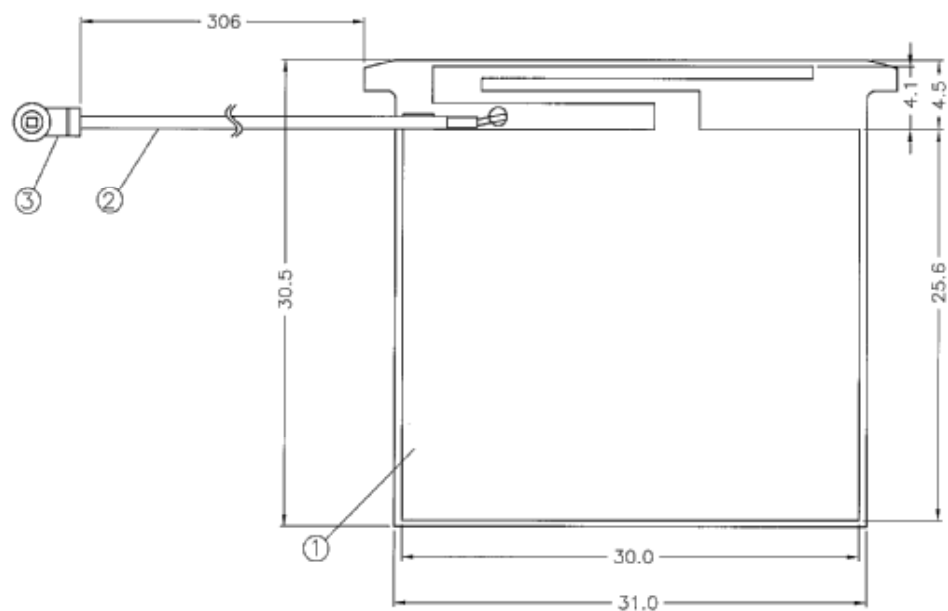
Include a dimensioned photo or dimensioned drawing of main antenna here.



Item	Description
①	Antenna element (TIAN01)
②	Coaxial cable, ϕ 0.95, color white
③	Coaxial connector, U.FL or its compatible

The drawing of a main sub-assembly.
Unit: mm

Include a dimensioned photo or dimensioned drawing of aux antenna here.



Item	Description
①	Antenna element (TIAN01)
②	Coaxial cable, ϕ 0.95, color black
③	Coaxial connector, U.FL or its compatible

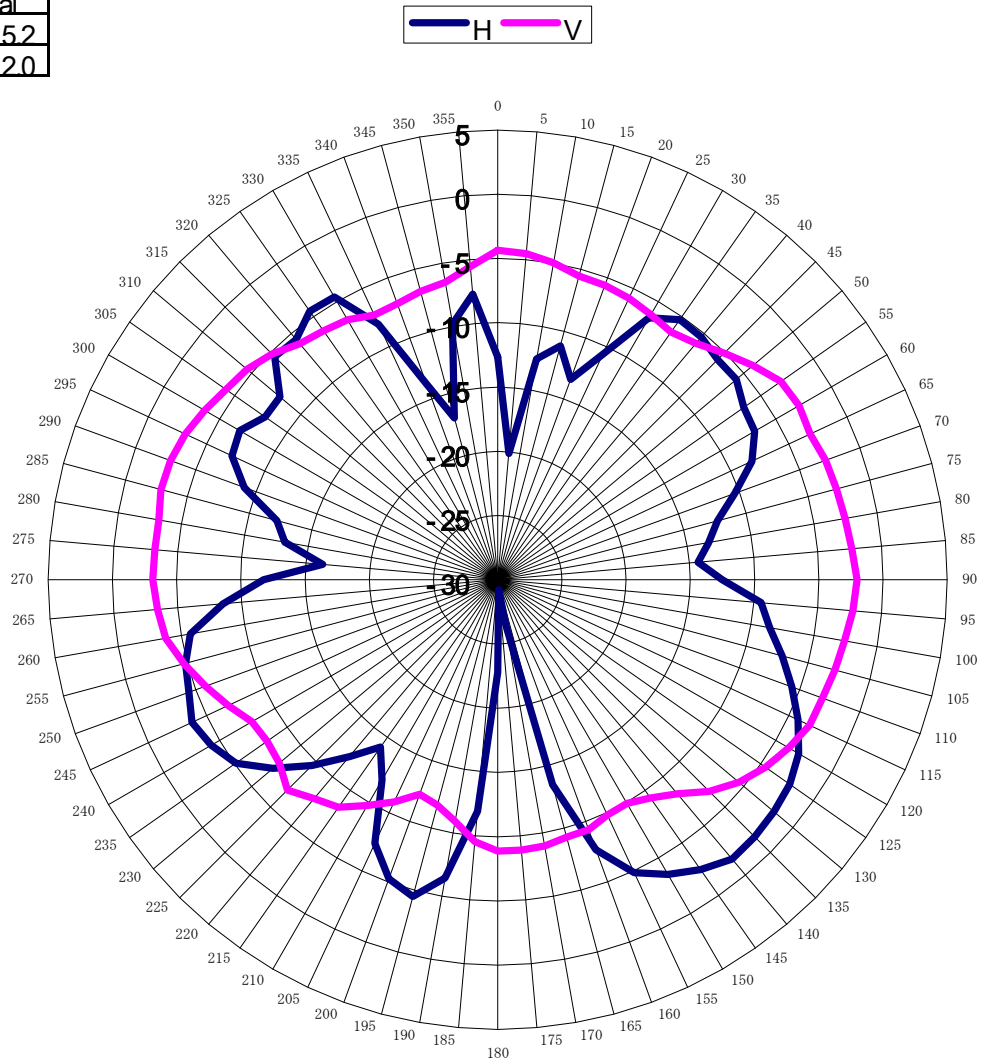
The drawing of an aux sub-assembly.
Unit: mm

Section 3. Radiation characteristics of antennae Loaded in Host Platform

2400-2500MHz radiation characteristic

Main antenna: 2400 MHz

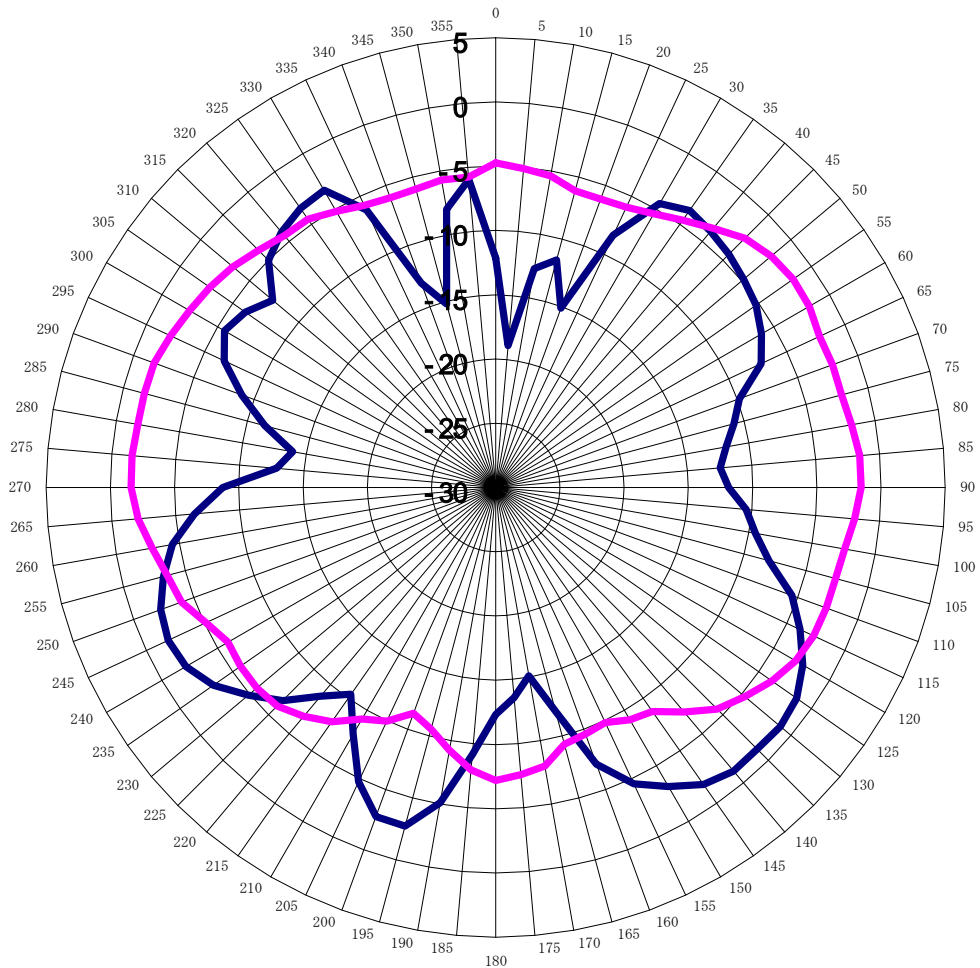
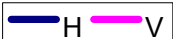
	Horizontal	Vertical
AVG	-6.8	-5.2
MAX	-1.6	-2.0



Center Frequency	2400 MHz
Horizontal (dBi) peak	-1.6
Vertical (dBi) peak	-2.0
Horiz+Vert (dBi) peak	-1.6

Main antenna: 2450 MHz

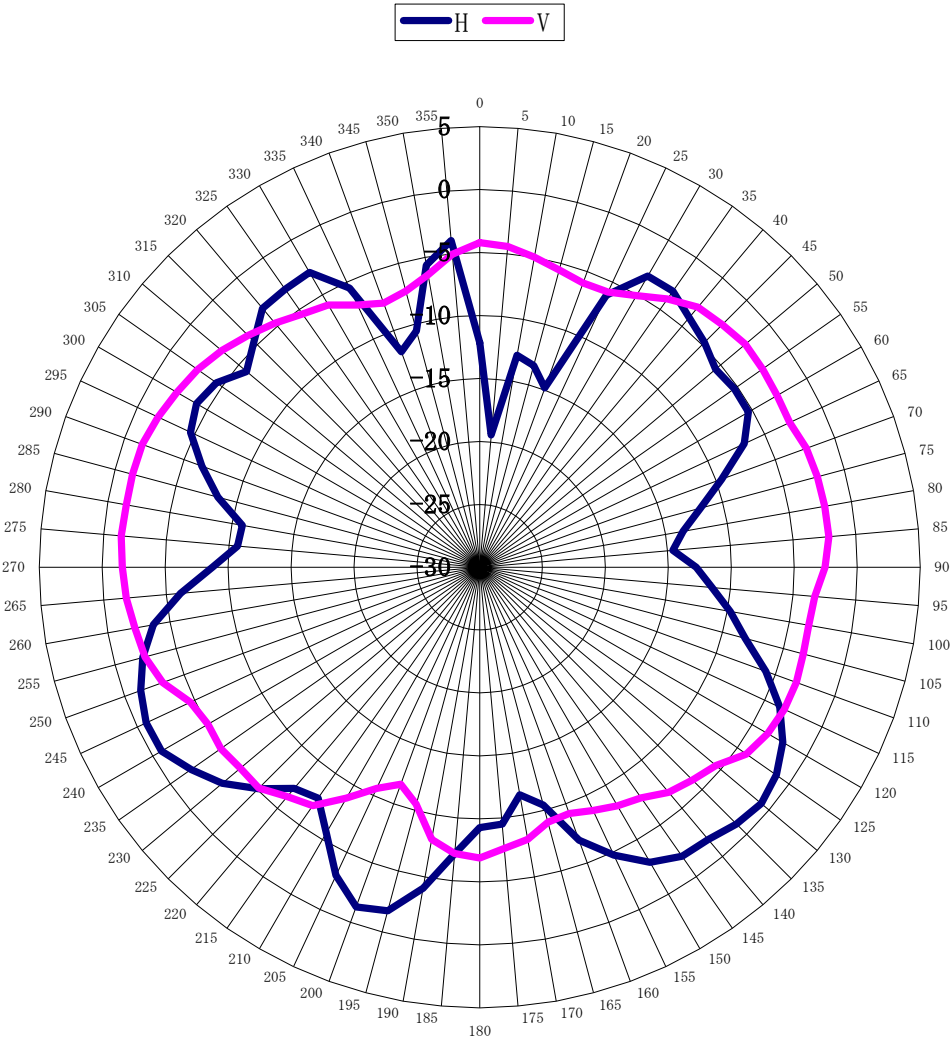
	Horizontal	Vertical
AVG	- 5.6	- 4.2
MAX	- 1.1	- 1.6



Center Frequency	2450 MHz
Horizontal (dBi) peak	- 1.1
Vertical (dBi) peak	- 1.6
Horiz+Vert (dBi) peak	- 1.1

Main antenna: 2500 MHz

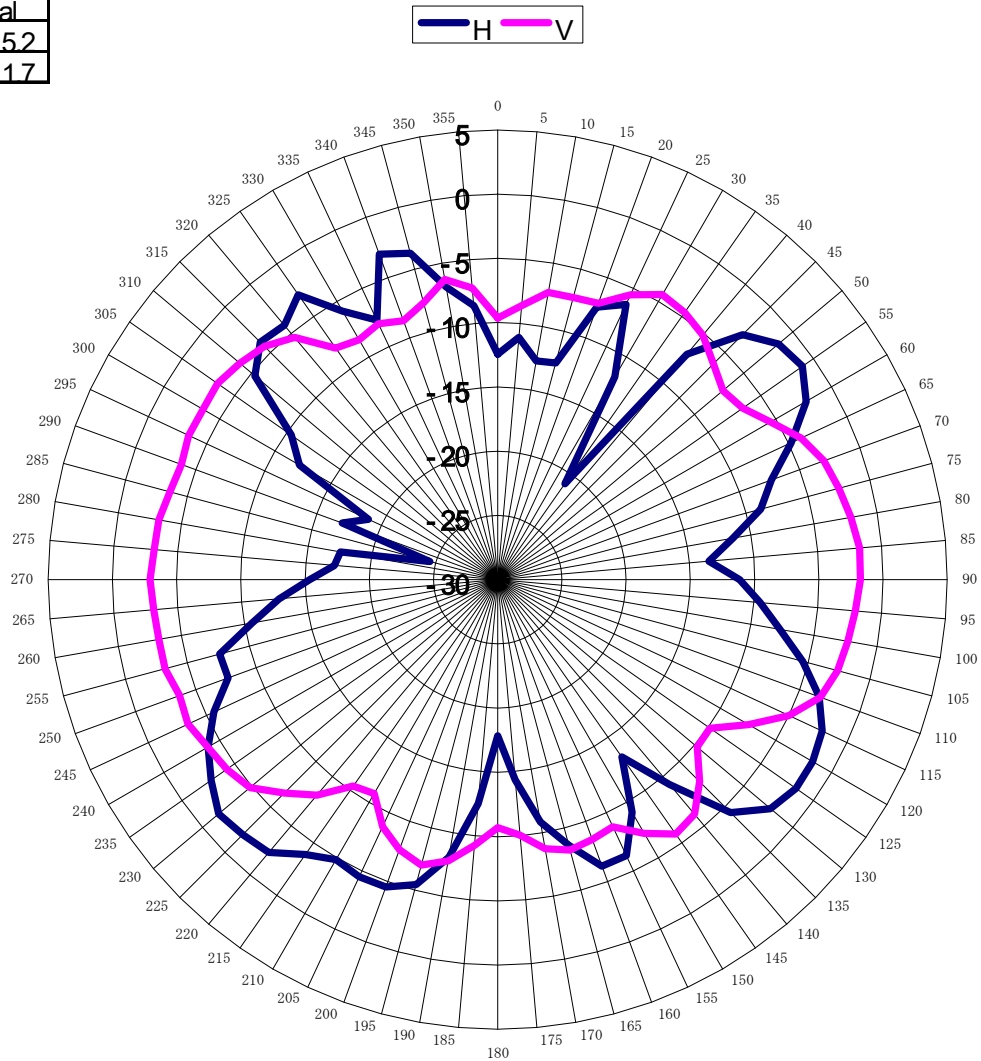
	Horizontal	Vertical
AVG	-4.9	-4.2
MAX	-0.8	-1.4



Center Frequency	2500 MHz
Horizontal (dBi) peak	- 0.8
Vertical (dBi) peak	- 1.4
Horiz+Vert (dBi) peak	- 0.8

Auxiliary antenna: 2400 MHz

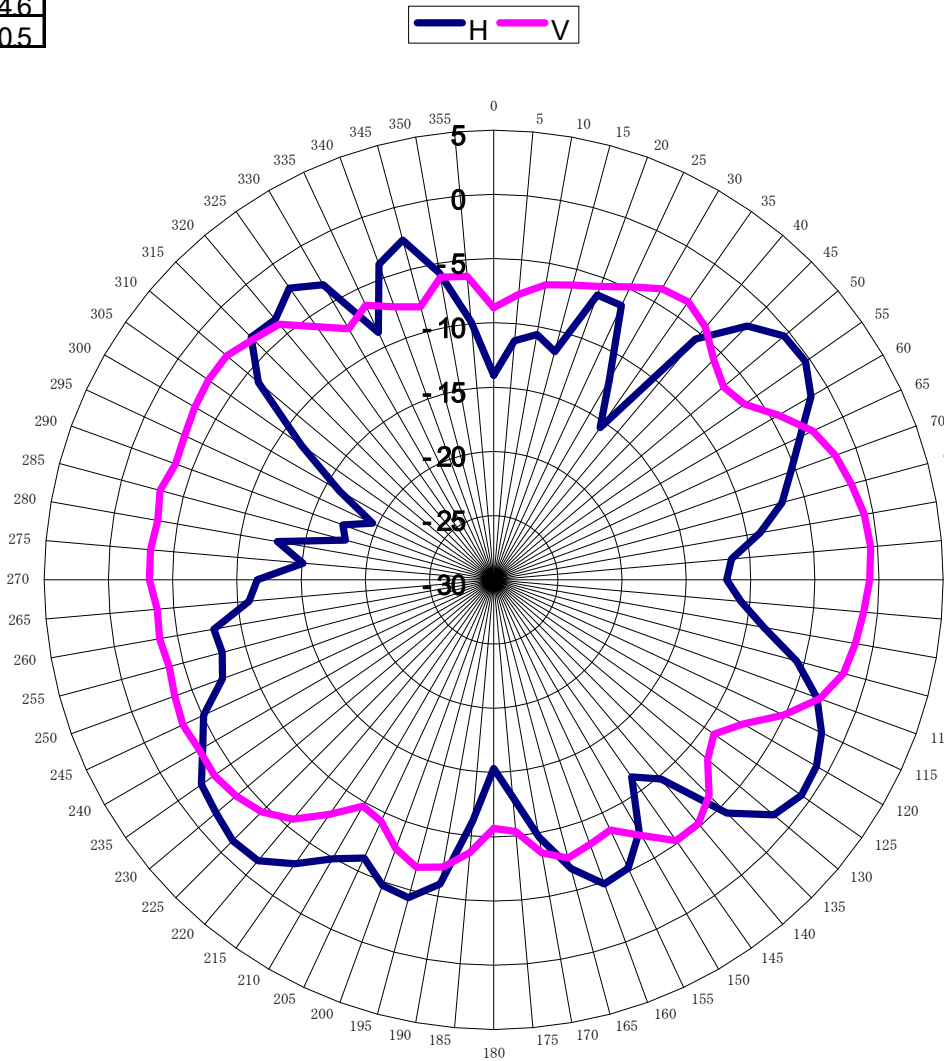
	Horizontal	Vertical
AVG	-5.9	-5.2
MAX	-1.1	-1.7



Center Frequency	2400 MHz
Horizontal (dBi) peak	- 1.1
Vertical (dBi) peak	- 1.7
Horiz+Vert (dBi) peak	- 1.1

Auxiliary antenna: 2450 MHz

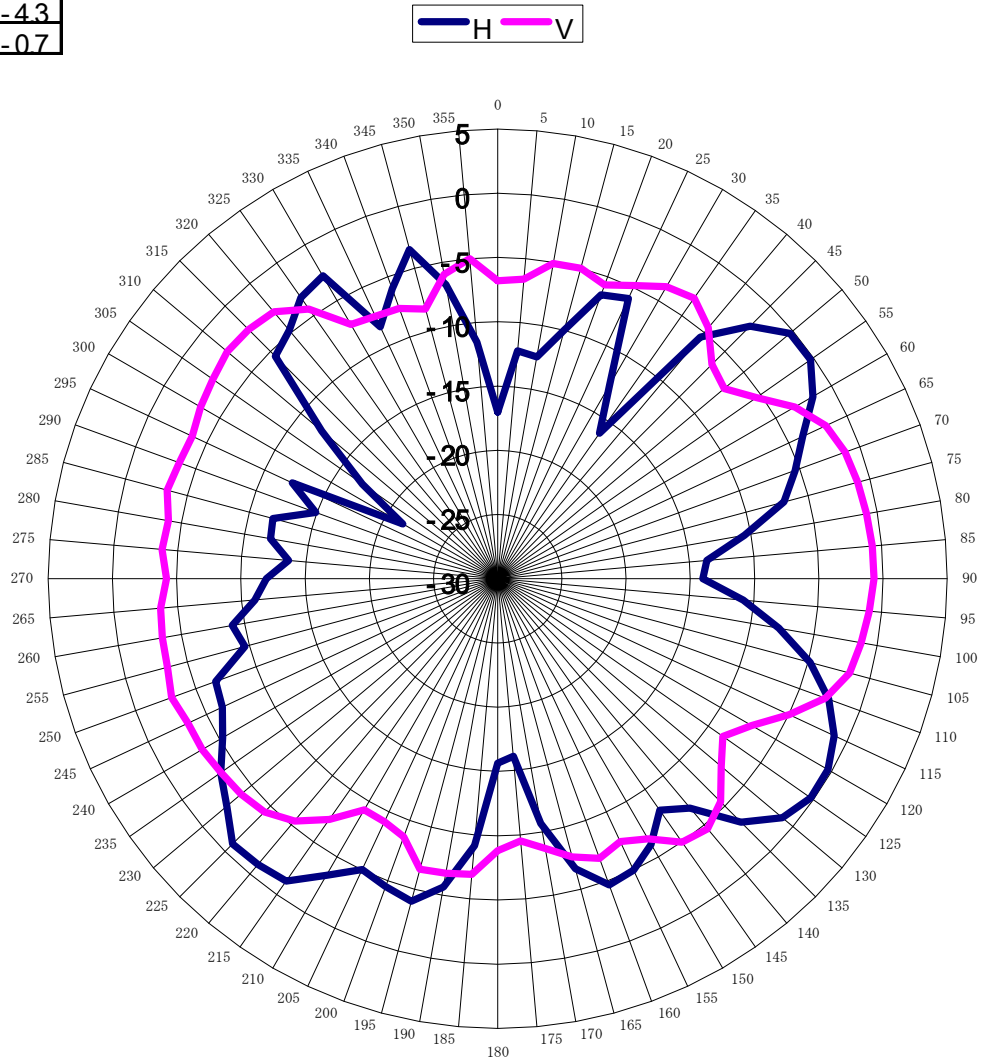
	Horizontal	Vertical
AVG	- 5.3	- 4.6
MAX	- 0.4	- 0.5



Center Frequency	2450 MHz
Horizontal (dBi) peak	- 0.4
Vertical (dBi) peak	- 0.5
Horiz+Vert (dBi) peak	- 0.4

Auxiliary antenna: 2500 MHz

	Horizontal	Vertical
AVG	-5.3	-4.3
MAX	-0.3	-0.7

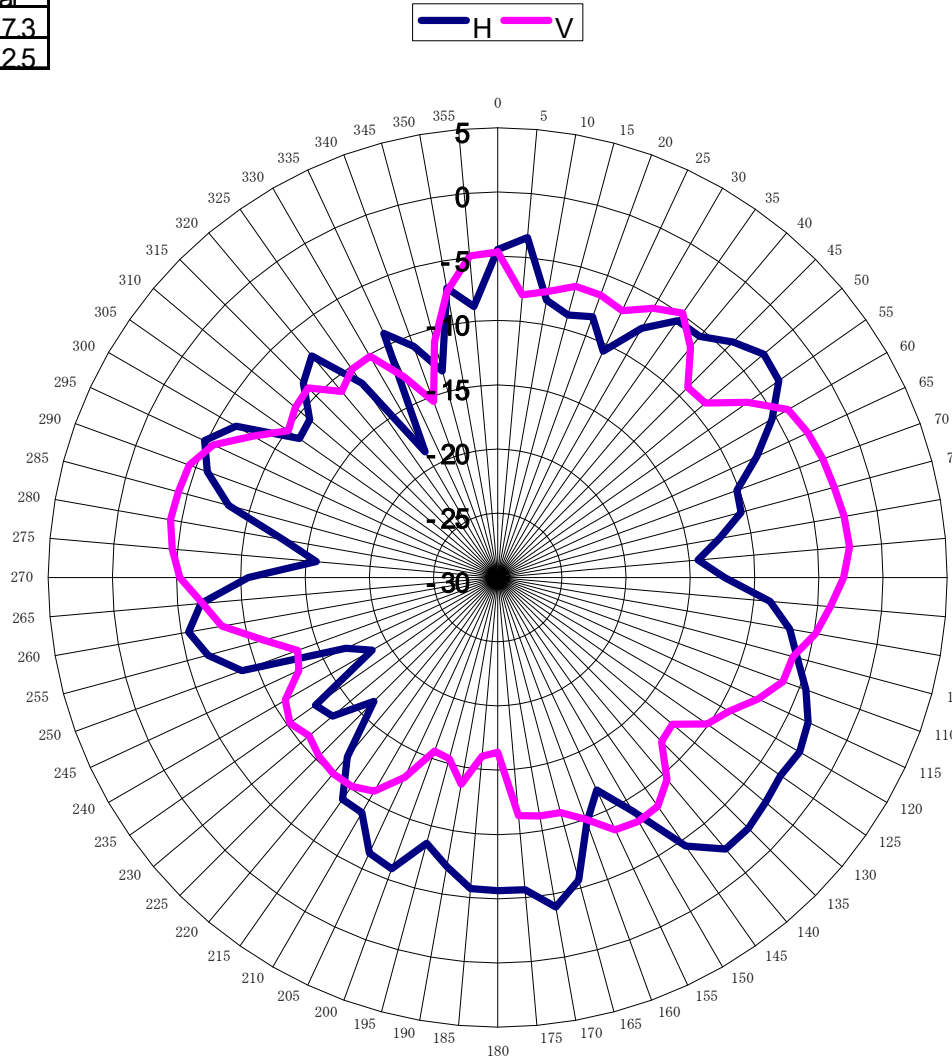


Center Frequency	2500 MHz
Horizontal (dBi) peak	-0.3
Vertical (dBi) peak	-0.7
Horiz+Vert (dBi) peak	-0.3

5150-5350 MHz radiation characteristic

Main antenna: 5150 MHz

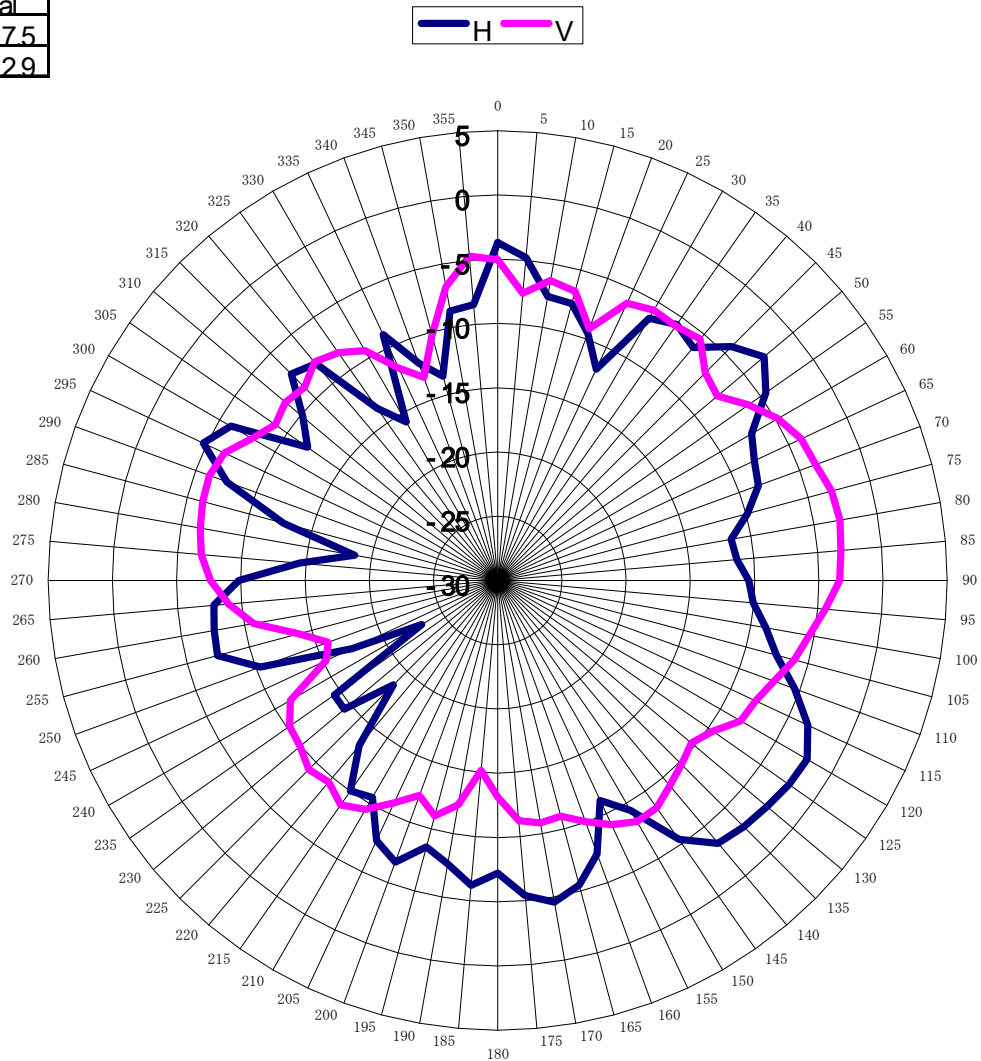
	Horizontal	Vertical
AVG	-6.9	-7.3
MAX	-2.4	-2.5



Center Frequency	5150 MHz
Horizontal (dBi) peak	-2.4
Vertical (dBi) peak	-2.5
Horiz+Vert (dBi) peak	-2.4

Main antenna: 5250 MHz

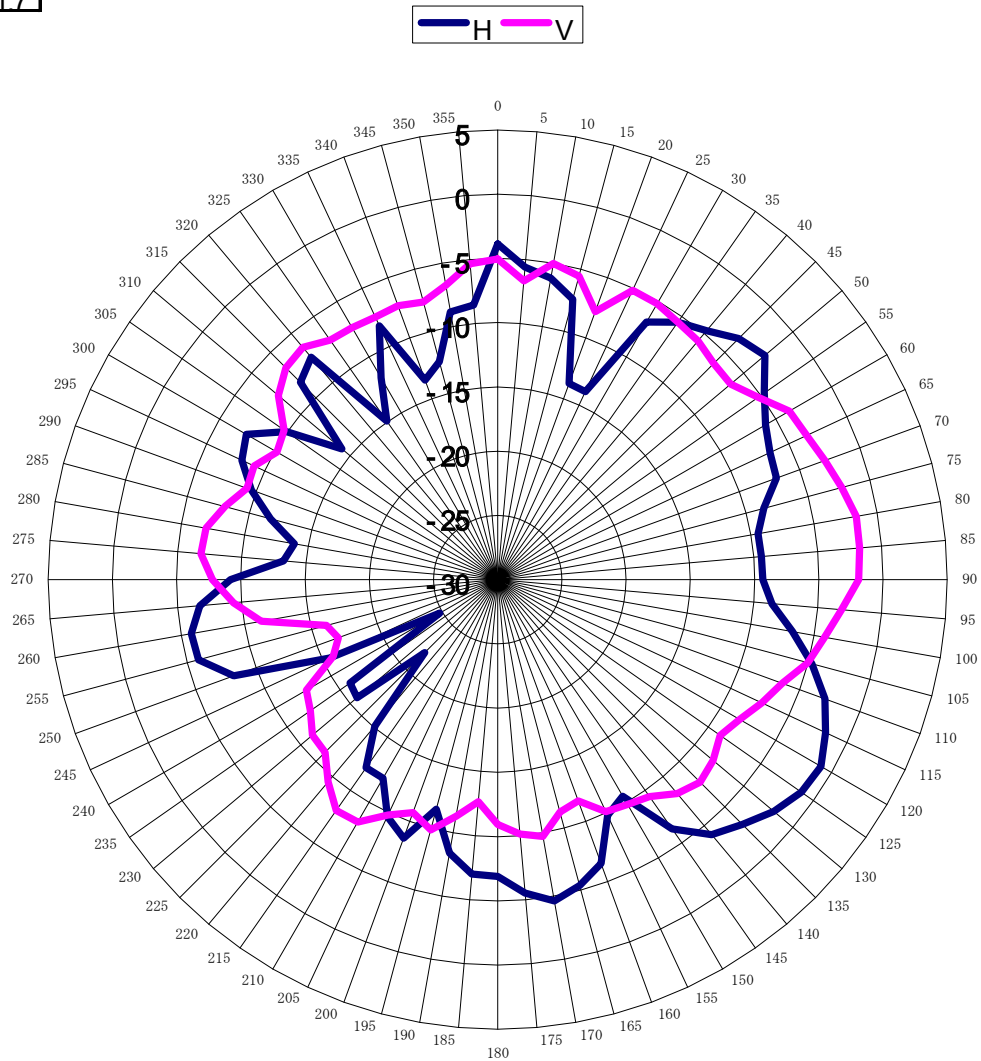
	Horizontal	Vertical
AVG	-7.2	-7.5
MAX	-2.2	-2.9



Center Frequency	5250 MHz
Horizontal (dBi) peak	-2.2
Vertical (dBi) peak	-2.9
Horiz+Vert (dBi) peak	-2.2

Main antenna: 5350 MHz

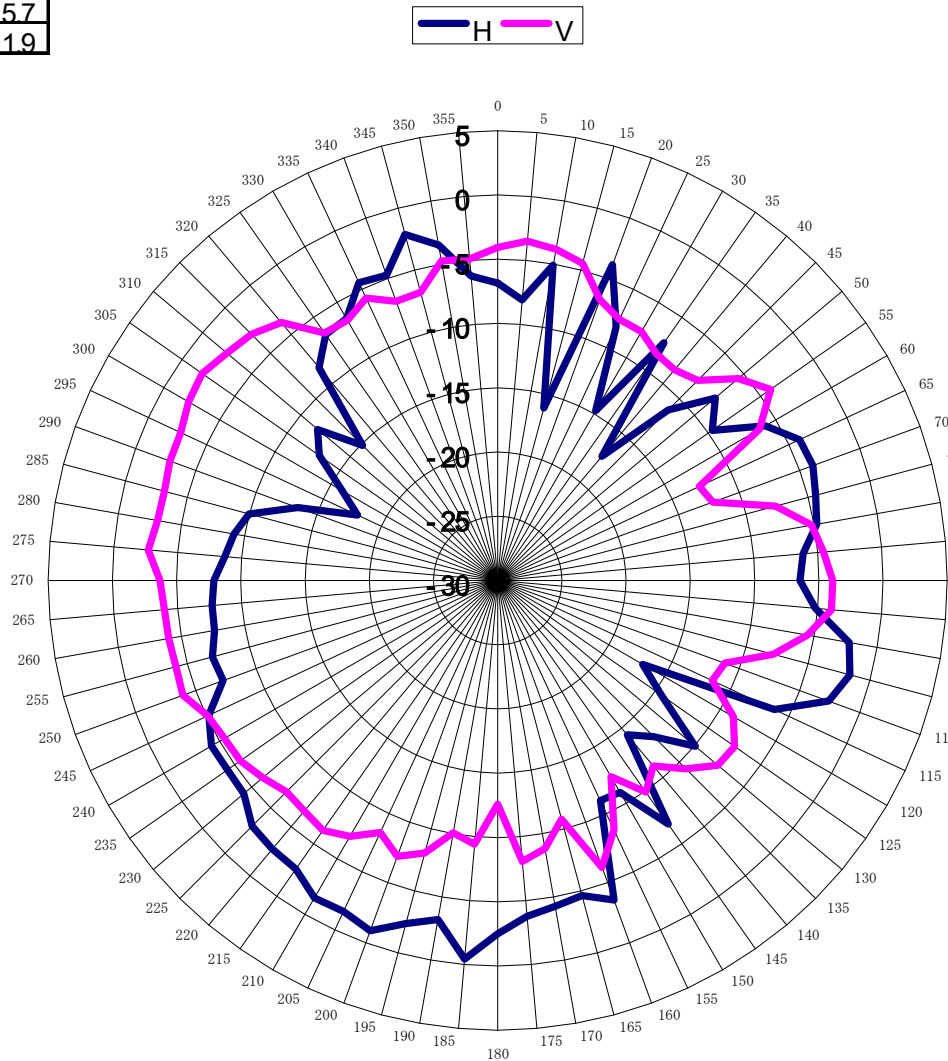
	Horizontal	Vertical
AVG	- 6.9	- 6.9
MAX	- 1.0	- 1.7



Center Frequency	5350 MHz
Horizontal (dBi) peak	- 1.0
Vertical (dBi) peak	- 1.7
Horiz+Vert (dBi) peak	- 1.0

Auxiliary antenna: 5150 MHz

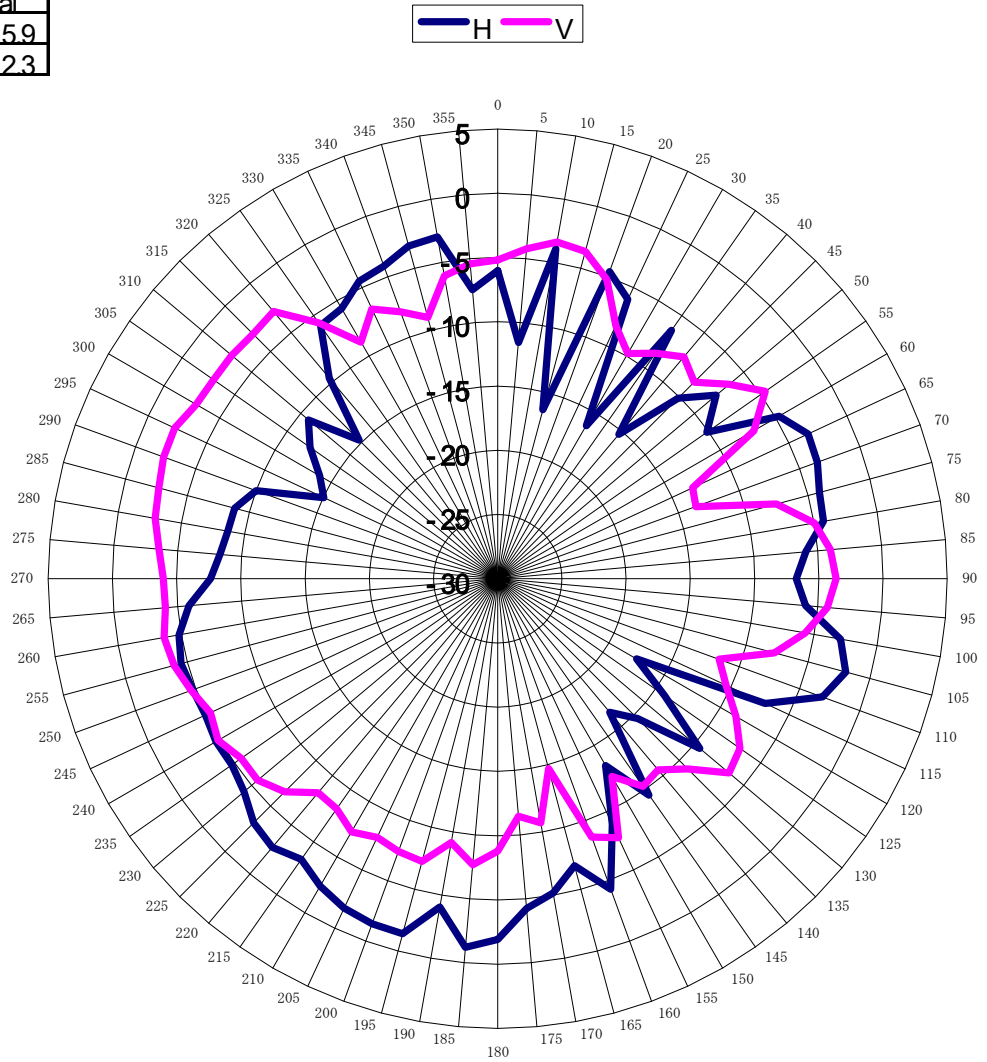
	Horizontal	Vertical
AVG	-5.5	-5.7
MAX	-0.4	-1.9



Center Frequency	5150 MHz
Horizontal (dBi) peak	-0.4
Vertical (dBi) peak	-1.9
Horiz+Vert (dBi) peak	-0.4

Auxiliary antenna: 5250 MHz

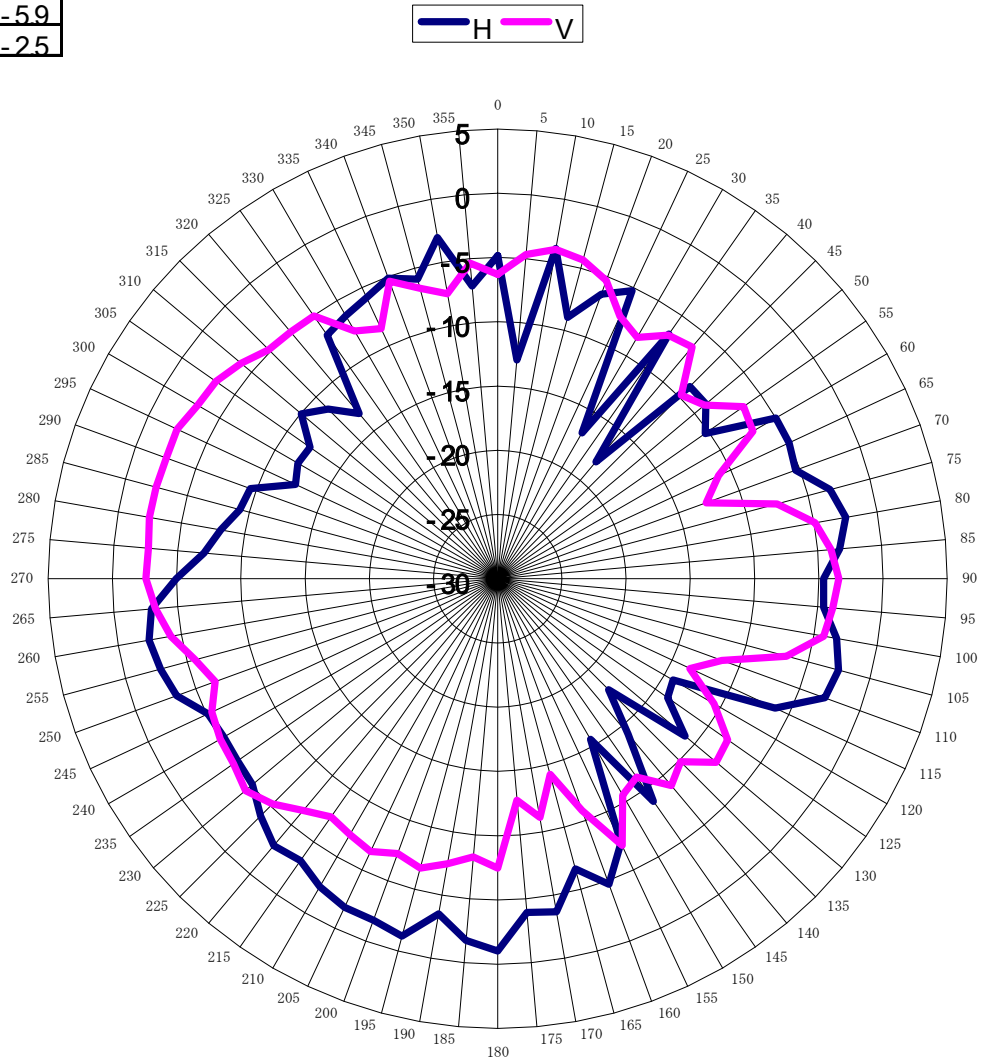
	Horizontal	Vertical
AVG	-5.5	-5.9
MAX	-1.2	-2.3



Center Frequency	5250 MHz
Horizontal (dBi) peak	-1.2
Vertical (dBi) peak	-2.3
Horiz+Vert (dBi) peak	-1.2

Auxiliary antenna: 5350 MHz

	Horizontal	Vertical
AVG	- 5.3	- 5.9
MAX	- 1.0	- 2.5

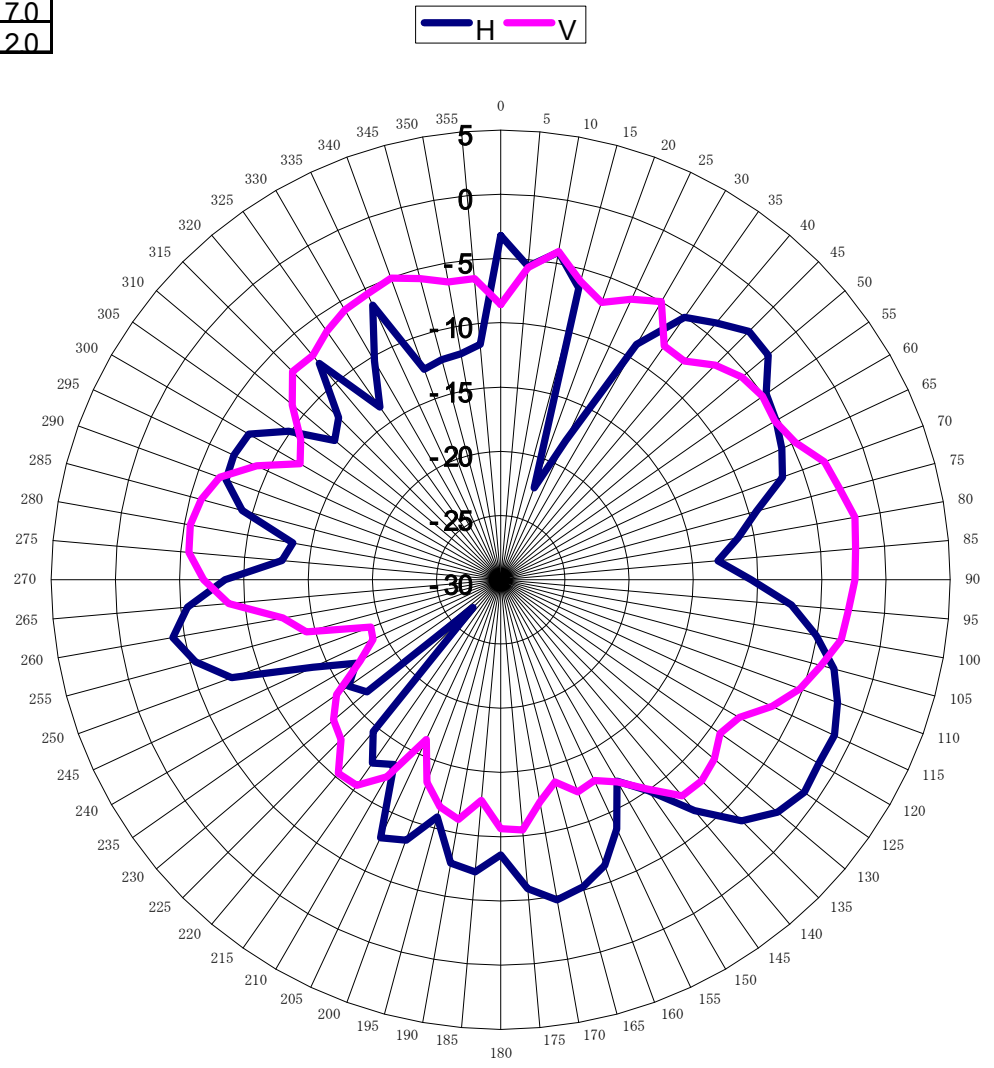


Center Frequency	5350 MHz
Horizontal (dBi) peak	- 1.0
Vertical (dBi) peak	- 2.5
Horiz+Vert (dBi) peak	- 1.0

5470-5725MHz radiation characteristic

Main antenna: 5470 MHz

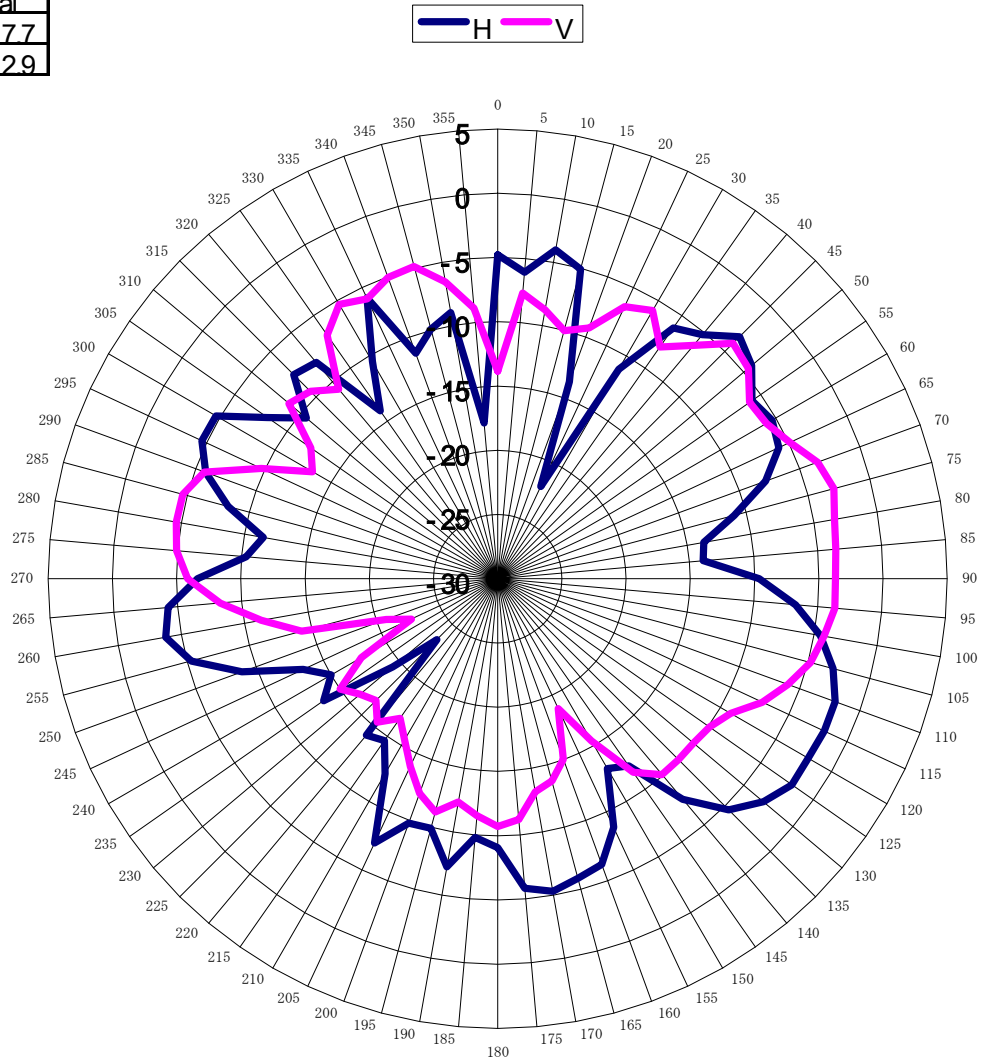
	Horizontal	Vertical
AVG	-6.7	-7.0
MAX	-1.2	-2.0



Center Frequency	5470 MHz
Horizontal (dBi) peak	-1.2
Vertical (dBi) peak	-2.0
Horiz+Vert (dBi) peak	-1.2

Main antenna: 5597.5 MHz

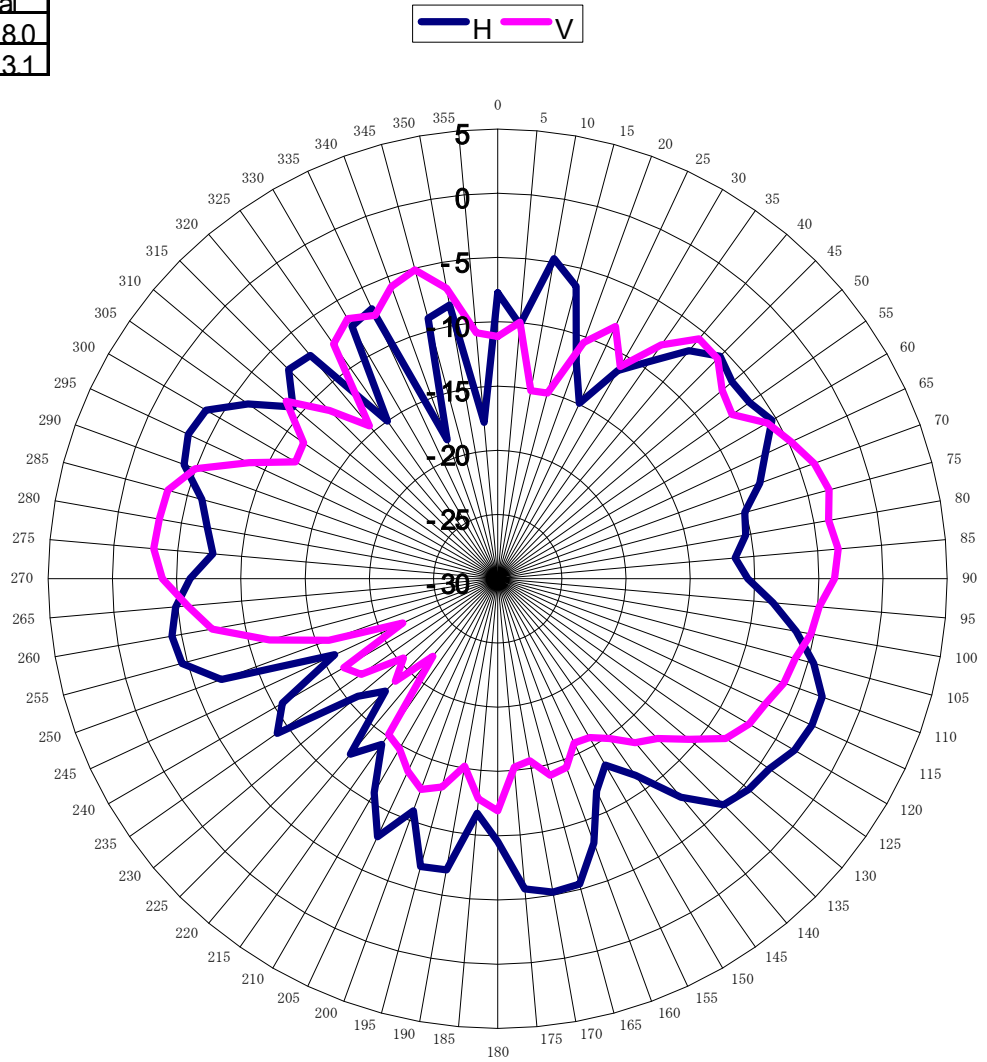
	Horizontal	Vertical
AVG	-6.8	-7.7
MAX	-2.0	-2.9



Center Frequency	5597.5 MHz
Horizontal (dBi) peak	-2.0
Vertical (dBi) peak	-2.9
Horiz+Vert (dBi) peak	-2.0

Main antenna: 5725 MHz

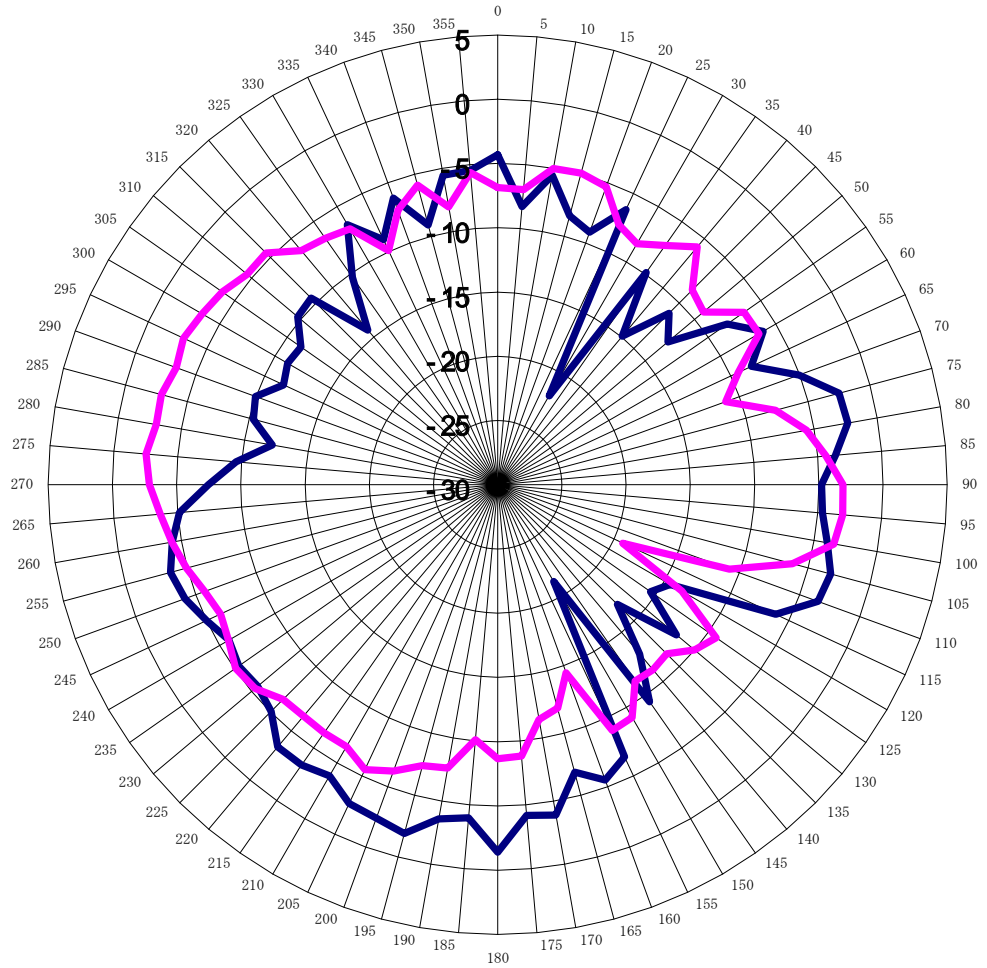
	Horizontal	Vertical
AVG	-7.2	-8.0
MAX	-3.0	-3.1



Center Frequency	5725 MHz
Horizontal (dBi) peak	-3.0
Vertical (dBi) peak	-3.1
Horiz+Vert (dBi) peak	-3.0

Auxiliary antenna: 5470 MHz

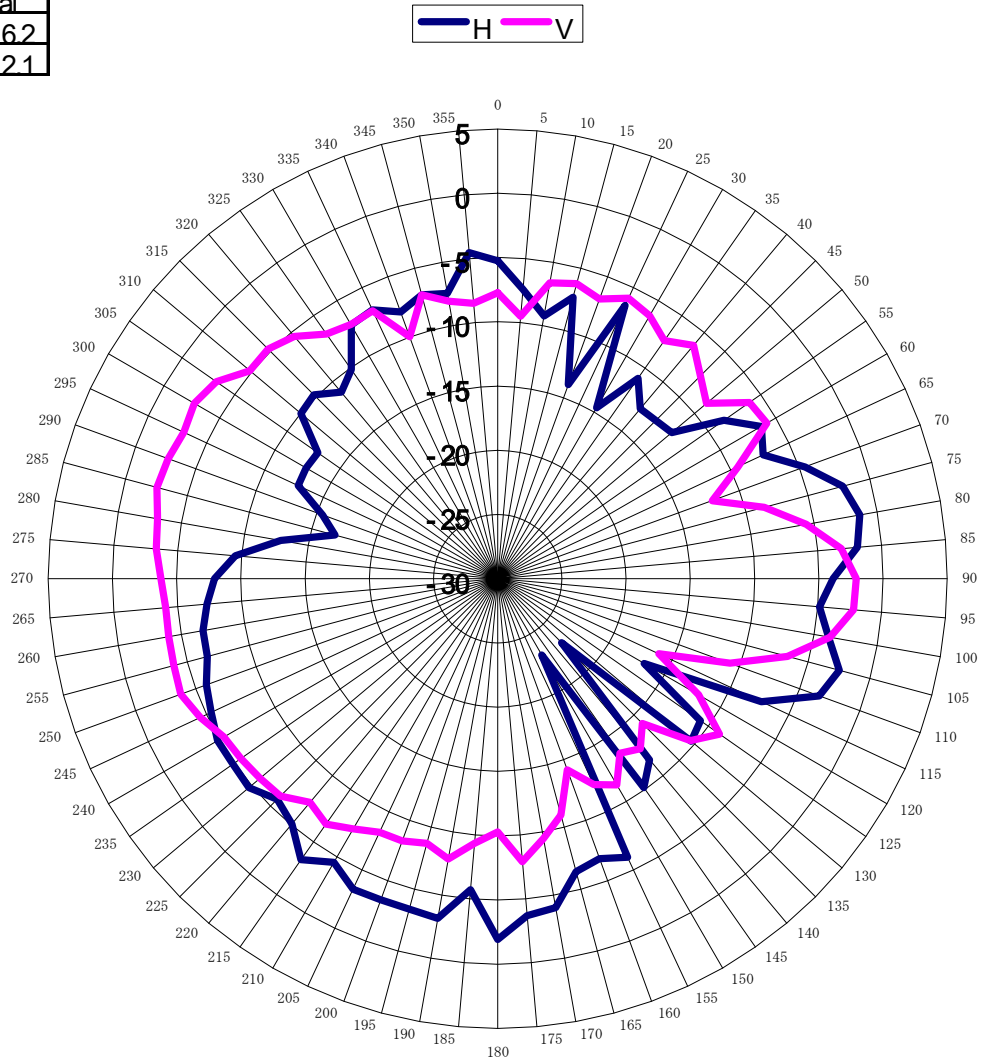
	Horizontal	Vertical
AVG	- 6.0	- 6.2
MAX	- 1.4	- 2.6



Center Frequency	5470 MHz
Horizontal (dBi) peak	- 1.4
Vertical (dBi) peak	- 2.6
Horiz+Vert (dBi) peak	- 1.4

Auxiliary antenna: 5597.5 MHz

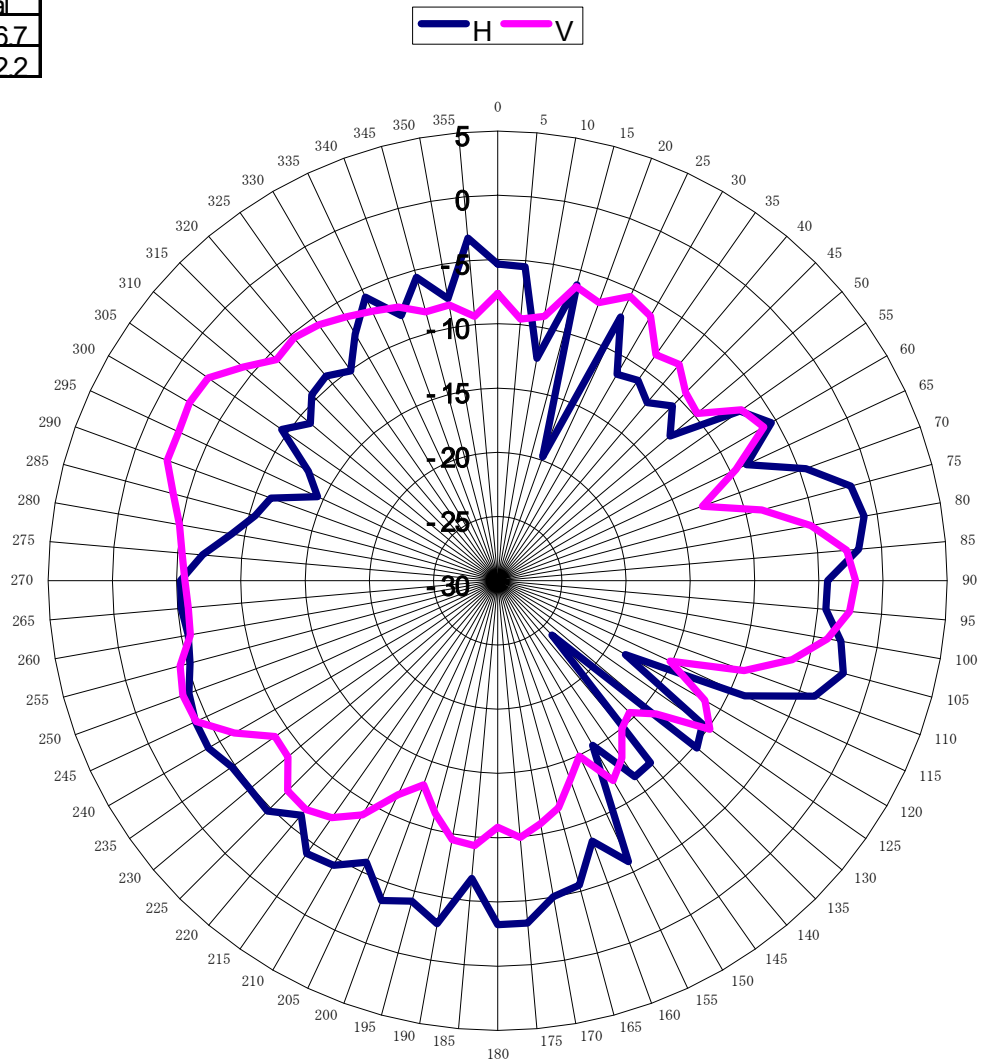
	Horizontal	Vertical
AVG	-6.3	-6.2
MAX	-1.4	-2.1



Center Frequency	5597.5 MHz
Horizontal (dBi) peak	-1.4
Vertical (dBi) peak	-2.1
Horiz+Vert (dBi) peak	-1.4

Auxiliary antenna: 5725 MHz

	Horizontal	Vertical
AVG	-6.0	-6.7
MAX	-1.1	-2.2

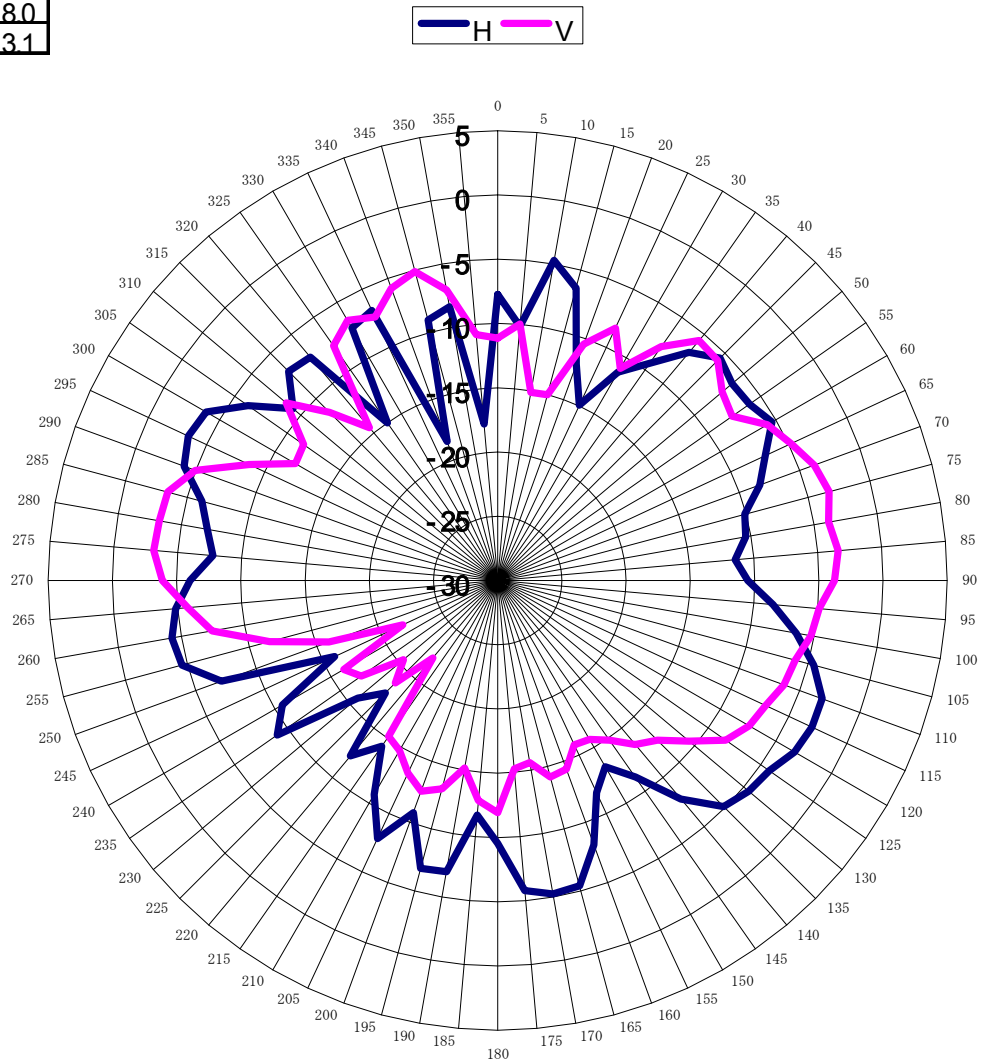


Center Frequency	5725 MHz
Horizontal (dBi) peak	- 1.1
Vertical (dBi) peak	- 2.2
Horiz+Vert (dBi) peak	- 1.1

5725-5850 MHz radiation characteristic

Main antenna: 5725 MHz

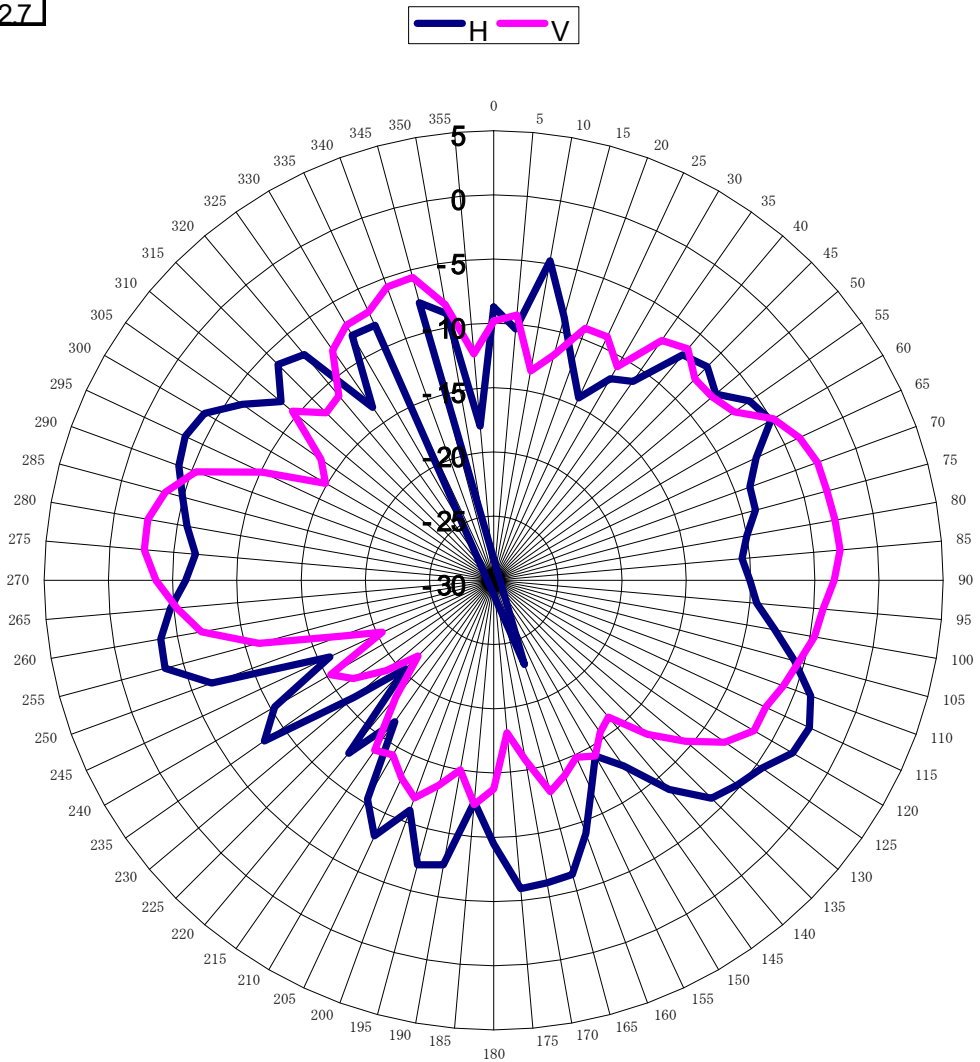
	Horizontal	Vertical
AVG	-7.2	-8.0
MAX	-3.0	-3.1



Center Frequency	5725 MHz
Horizontal (dBi) peak	-3.0
Vertical (dBi) peak	-3.1
Horiz+Vert (dBi) peak	-3.0

Main antenna: 5785 MHz

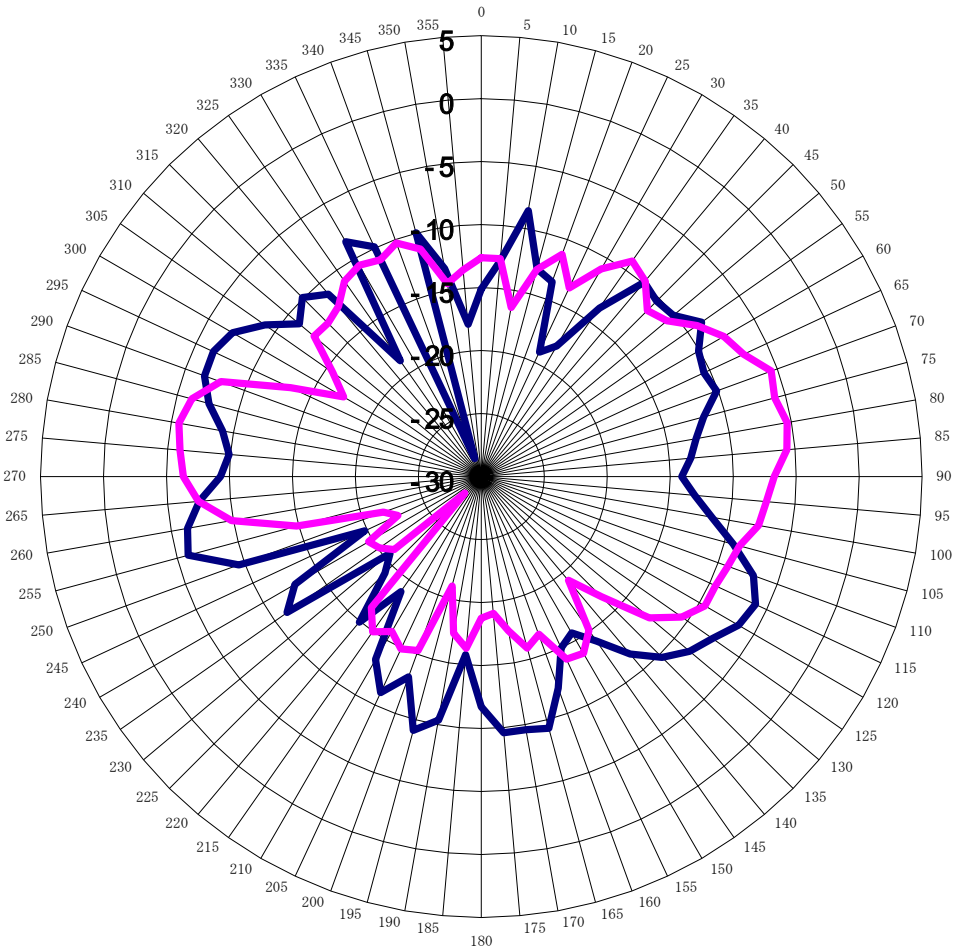
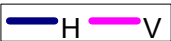
	Horizontal	Vertical
AVG	- 7.3	- 7.8
MAX	- 2.9	- 2.7



Center Frequency	5785 MHz
Horizontal (dBi) peak	- 2.9
Vertical (dBi) peak	- 2.7
Horiz+Vert (dBi) peak	- 2.7

Main antenna: 5850 MHz

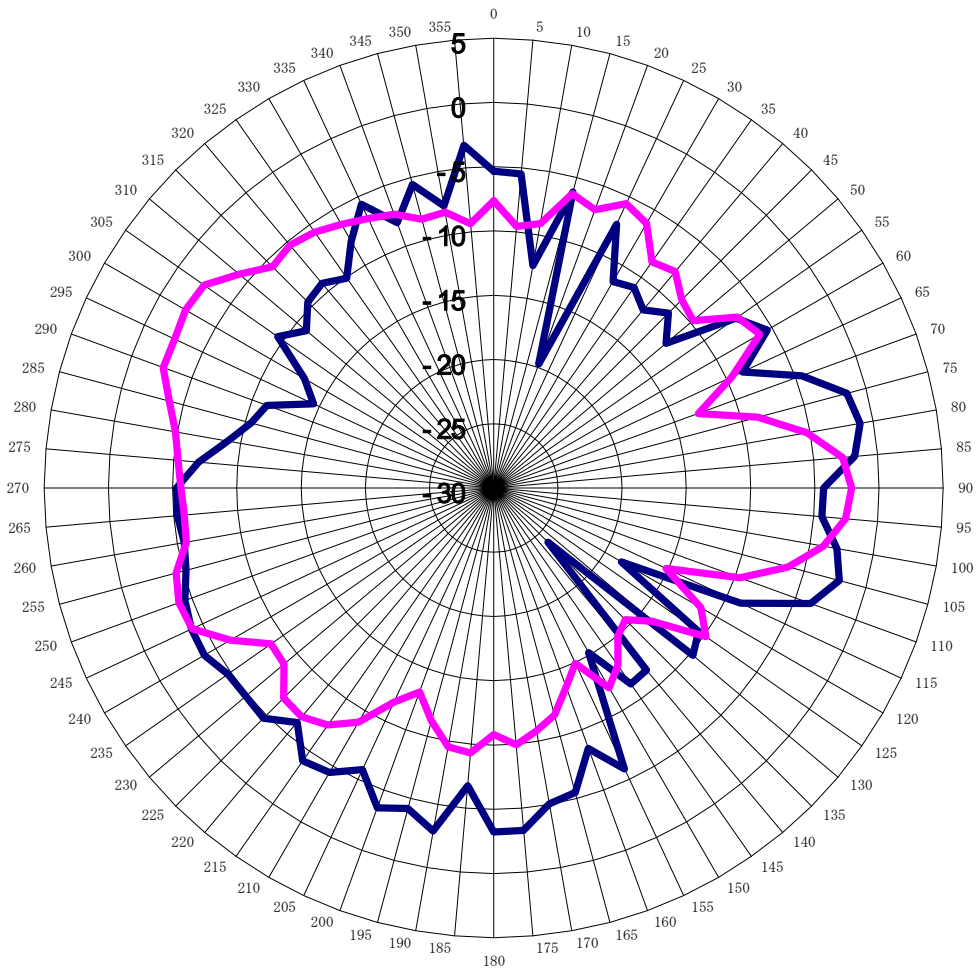
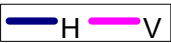
	Horizontal	Vertical
AVG	- 10.4	- 10.6
MAX	- 5.9	- 5.3



Center Frequency	5850 MHz
Horizontal (dBi) peak	- 5.9
Vertical (dBi) peak	- 5.3
Horiz+Vert (dBi) peak	- 5.3

Auxiliary antenna: 5725 MHz

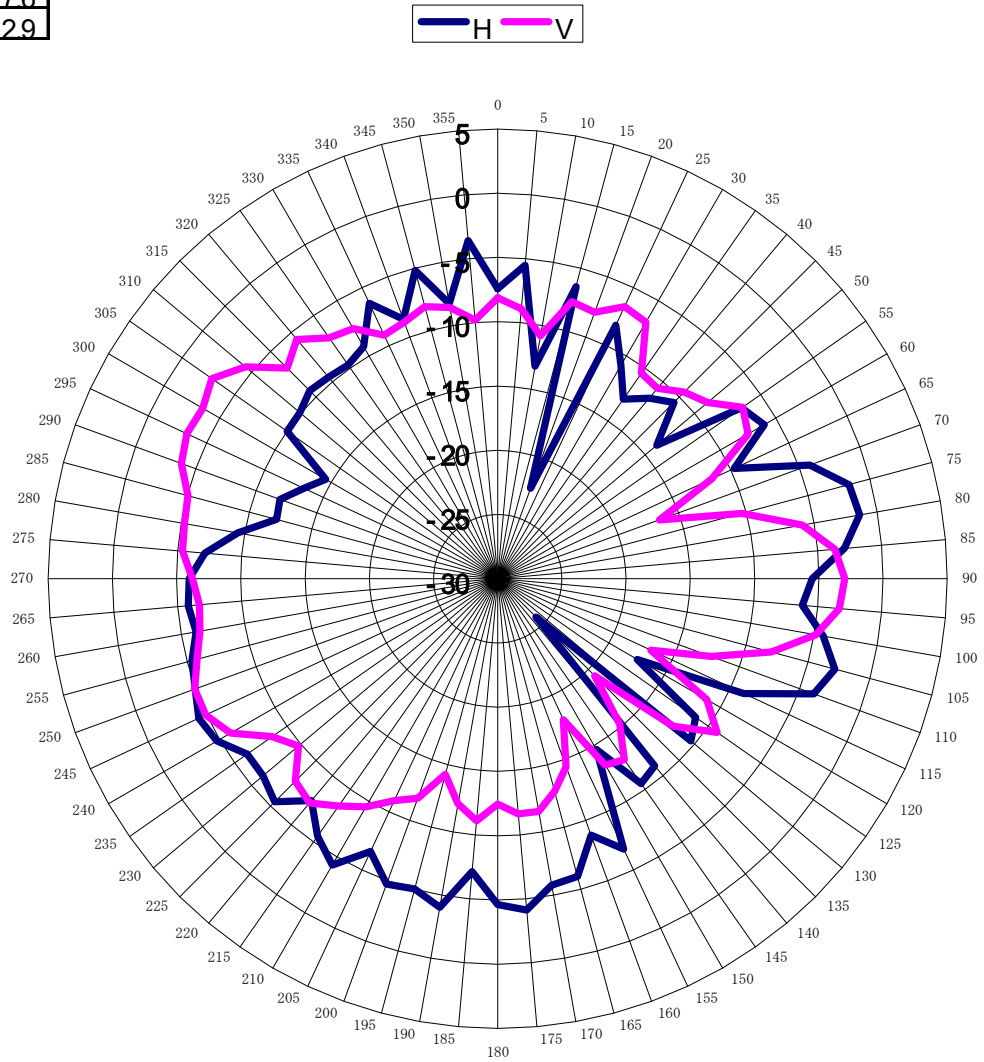
	Horizontal	Vertical
AVG	-6.0	-6.7
MAX	-1.1	-2.2



Center Frequency	5725 MHz
Horizontal (dBi) peak	- 1.1
Vertical (dBi) peak	- 2.2
Horiz+Vert (dBi) peak	- 1.1

Auxiliary antenna: 5785 MHz

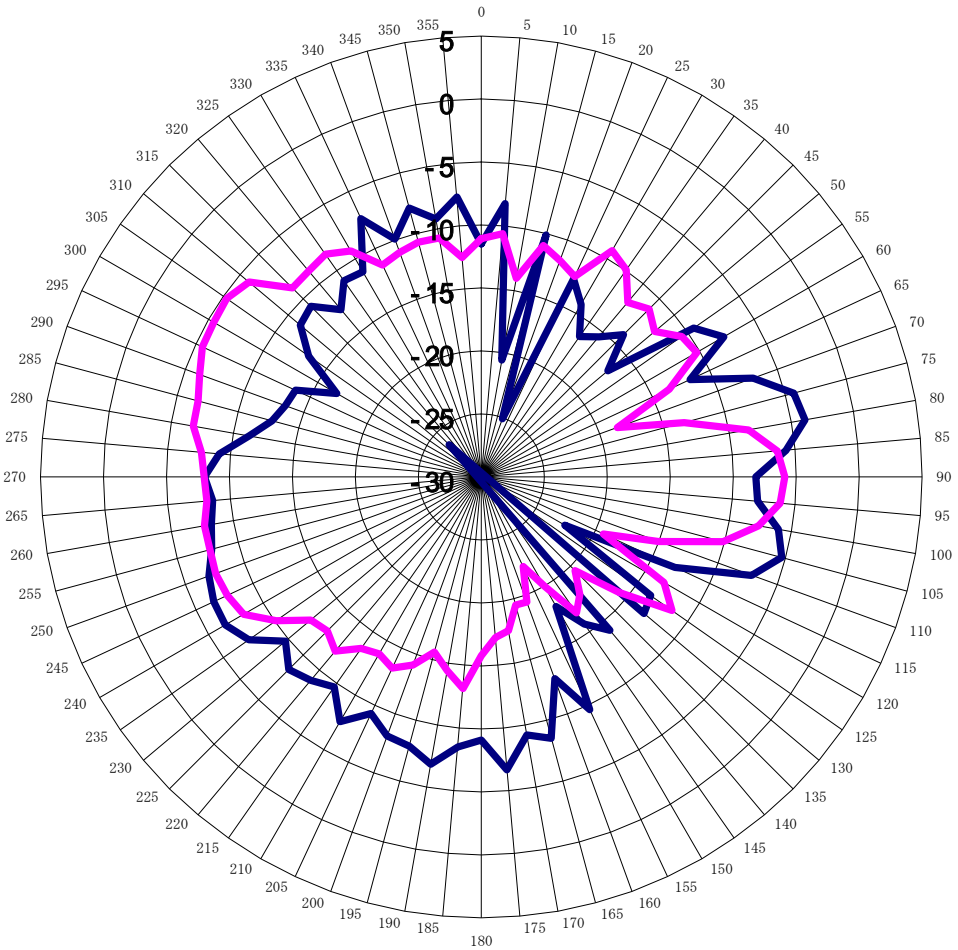
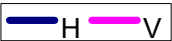
	Horizontal	Vertical
AVG	- 6.7	- 7.6
MAX	- 1.4	- 2.9



Center Frequency	5785 MHz
Horizontal (dBi) peak	- 1.4
Vertical (dBi) peak	- 2.9
Horiz+Vert (dBi) peak	- 1.4

Auxiliary antenna: 5850 MHz

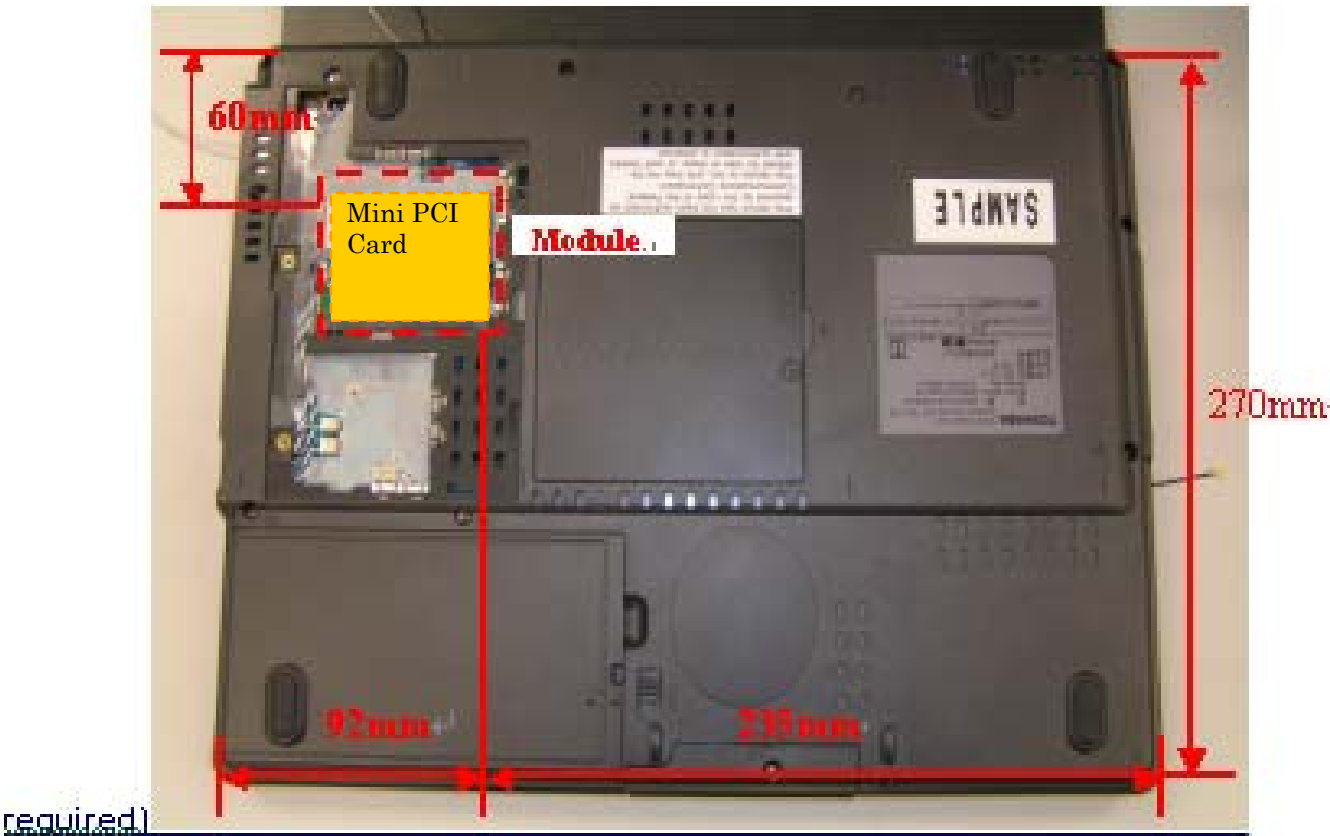
	Horizontal	Vertical
AVG	-9.3	-10.0
MAX	-3.9	-5.3



Center Frequency	5850 MHz
Horizontal (dBi) peak	- 3.9
Vertical (dBi) peak	- 5.3
Horiz+Vert (dBi) peak	- 3.9

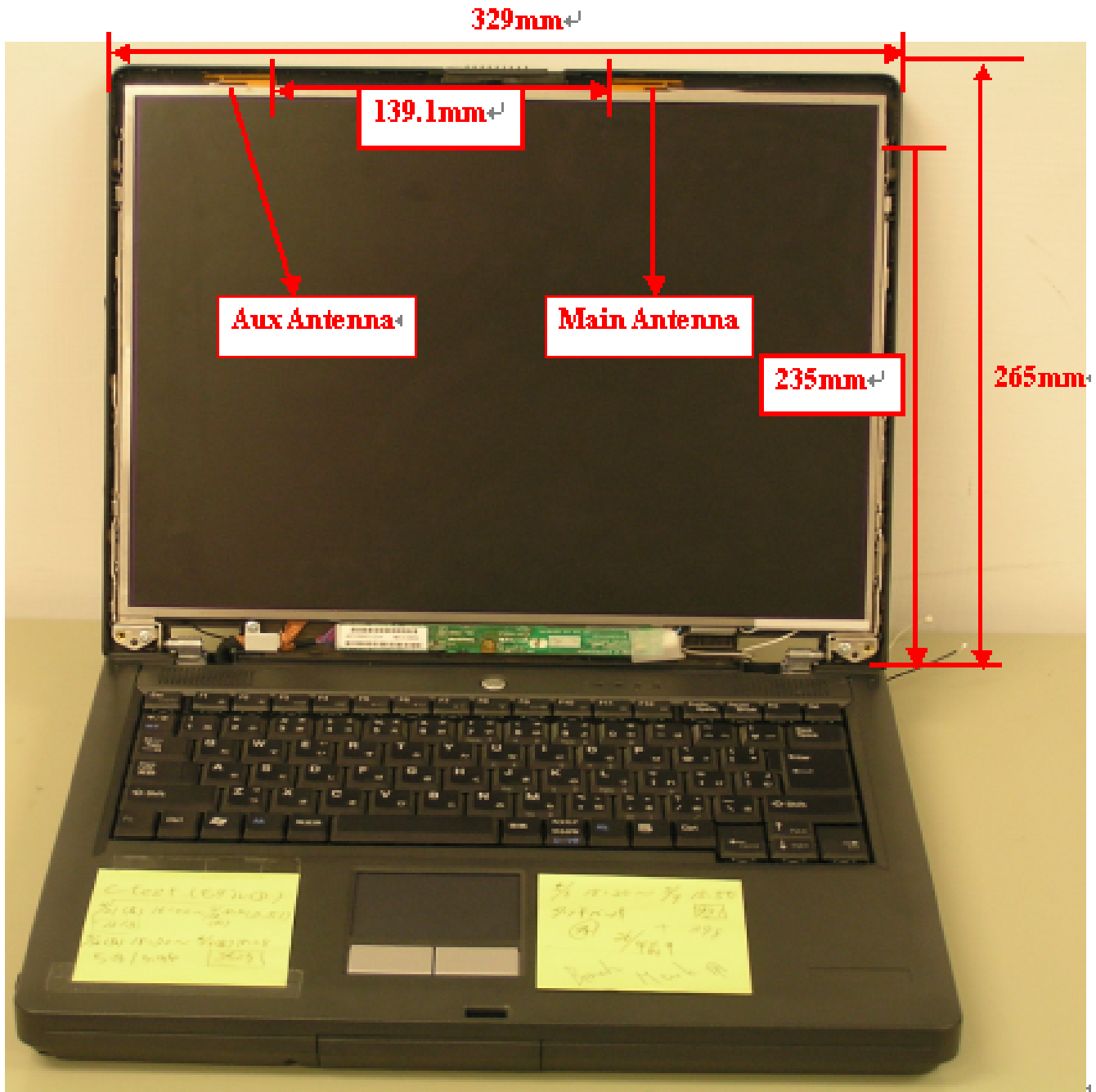
Section 4. Host Platform Information

Module Location Photo:

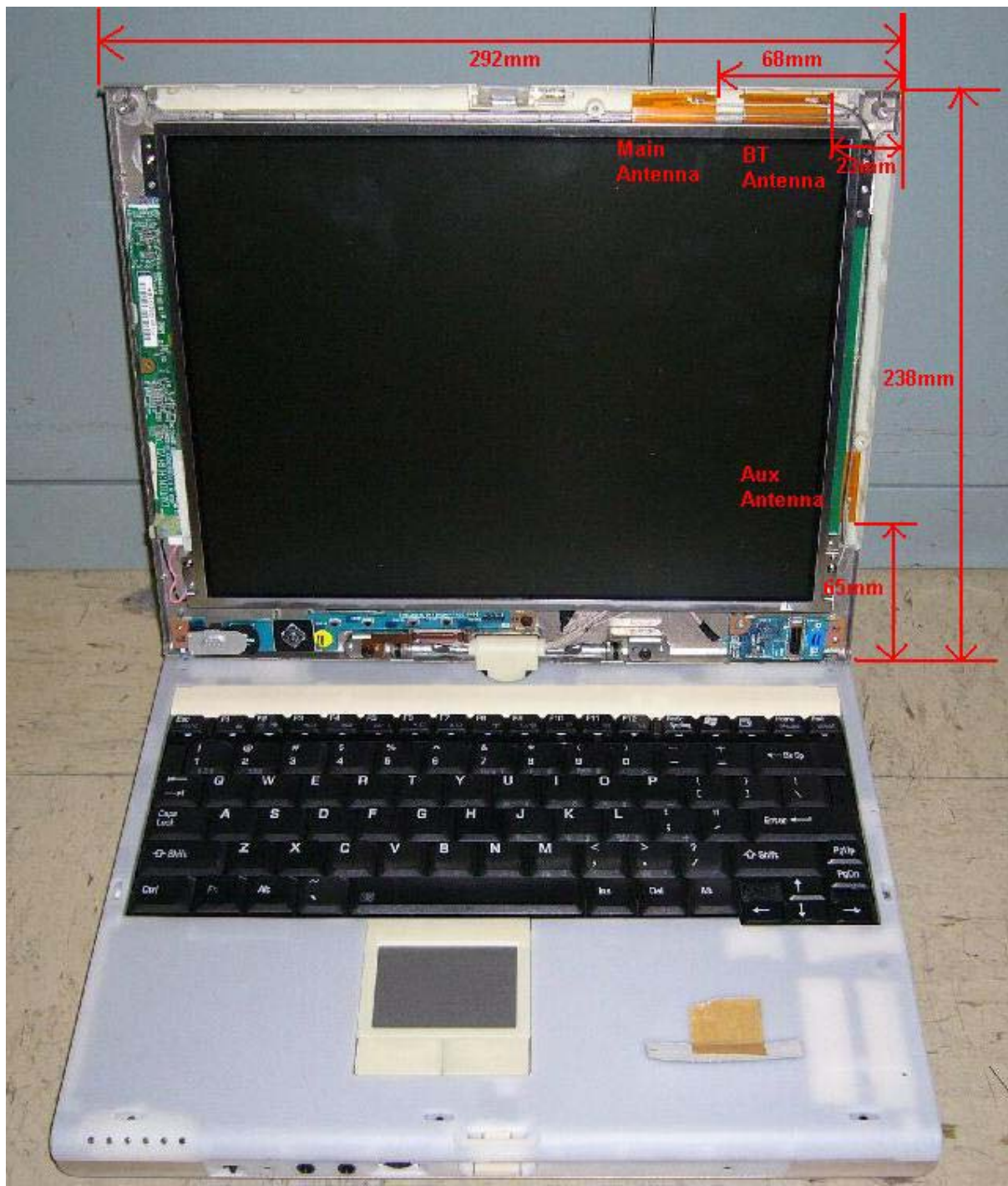


Section 5. Antenna Host Platform Location Information

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



Include a **dimensioned photo or dimensioned drawing** of main and auxiliary antenna placements. (Antenna is located in top and side)



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)

