

Regulatory WLAN Antenna Information

2.4/5 GHz MA20 Series Multiple Band Antennas with Cable & Connector For IEEE802.11a/b/g/n

(English Language Required for Intel Regulatory Review / Approval)

Platform	
Platform Owner	Pegatron
Brand Name	Toshiba
Model Name	MA20
ODM	ACON
Target Launch Date	2014/07/16
Antenna	
Manufacturer	ACON
Part Number	■ Tx1 Antenna:APP6Y-700149
	■ Tx/ Rx2 Antenna: APP6Y-700150
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Module	
With WLAN Module	☐
(Check Box)	☐
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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 and 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	Required	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, 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: APP6Y-700149 Tx1 antenna	ACON Corporation	PIFA	1)cable p/n: GBE/Shen-Yu/YFC/Hanstar 2) 50 ohm Normal OD 1.13 coaxial cable 3) length: 398.5mm 4) Connector p/n: I-pex: 20278-112R-13 HRS: U.FL-LP(P)-068 ACON: RMH18-5L11601	2400-2500MHz -0.88 dBi (peak)	2400-2500MHz 0.28 dBi (peak)	2400-2500MHz 2.0 max	2400-2500MHz 1.16 dBi (peak)
				5150-5350MHz -0.22 dBi (peak)	5150-5350MHz 1.52 dBi (peak)	5150-5350MHz 2.0 max	5150-5350MHz 1.74 dBi (peak)
				5470-5725MHz 0.40 dBi (peak)	5470-5725MHz 2.24 dBi (peak)	5470-5725MHz 2.0 max	5470-5725MHz 1.84 dBi (peak)
				5725-5850MHz -0.88 dBi (peak)	5725-5850MHz 1.05 dBi (peak)	5725-5850MHz 2.0 max	5725-5850MHz 1.93 dBi (peak)
P/N: APP6Y-700150 Tx2 antenna	ACON Corporation	PIFA	1)cable p/n: GBE/Shen-Yu/YFC/Hanstar 2) 50 ohm Normal OD 1.13 coaxial cable 3) length: 529mm 4) Connector p/n: I-pex: 20278-112R-13 HRS: U.FL-LP(P)-068 ACON: RMH18-5L11601	2400-2500MHz 1.21 dBi (peak)	2400-2500MHz 2.79 dBi (peak)	2400-2500MHz 2.0 max	2400-2500MHz 1.58 dBi (peak)
				5150-5350MHz -0.88 dBi (peak)	5150-5350MHz 1.48 dBi (peak)	5150-5350MHz 2.0 max	5150-5350MHz 2.36 dBi (peak)
				5470-5725MHz -1.18 dBi (peak)	5470-5725MHz 1.33 dBi (peak)	5470-5725MHz 2.0 max	5470-5725MHz 2.51 dBi (peak)
				5725-5850MHz -1.38 dBi (peak)	5725-5850MHz 1.25 dBi (peak)	5725-5850MHz 2.0 max	5725-5850MHz 2.63 dBi (peak)

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

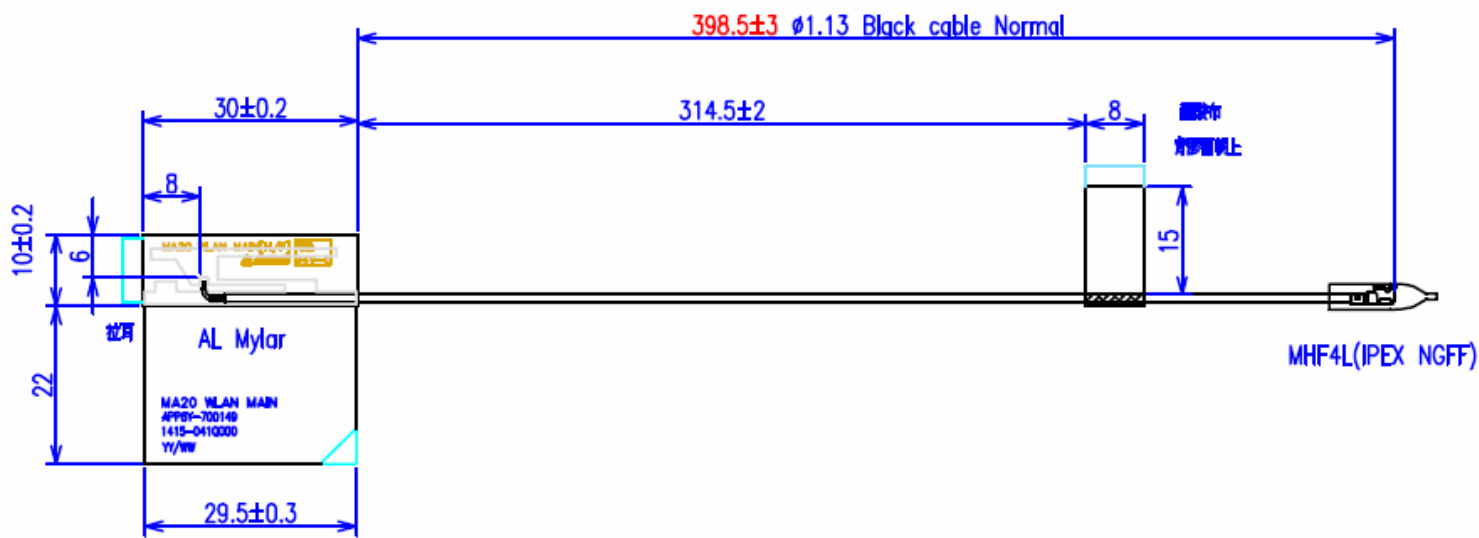
Antenna Peak Gain Table:

	Tx1 antenna			Tx2 (or Rx2) Antenna		
Frequency (MHz)	Horizontal	Vertical	H+V	Horizontal	Vertical	H+V
	(dBi)	(dBi)	(dBi)	(dBi)	(dBi)	(dBi)
2400	-3.90	-1.48	0.02	0.51	-1.32	1.01
2450	-2.23	-1.70	0.97	0.58	-0.06	1.03
2500	-1.74	-0.88	1.99	1.03	1.21	1.51
5150	-1.80	-2.10	-1.10	-0.92	-2.58	0.03
5250	-0.22	-3.55	0.63	-0.96	-3.76	0.03
5350	-0.86	-5.19	0.02	-0.88	-4.55	-0.12
5470	-1.08	-4.07	-0.06	-1.18	-4.90	-0.06
5600	0.40	-2.90	0.50	-3.63	-3.94	-1.86
5725	-1.56	-3.32	-1.34	-1.66	-3.80	-0.54
5800	-2.98	-1.24	-0.81	-1.38	-3.08	-0.58
5850	-2.51	-0.88	-0.64	-2.64	-4.11	-1.59

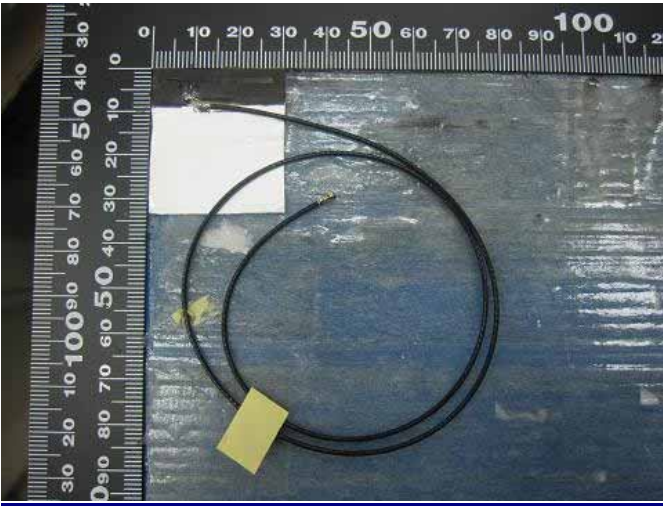
Section 2. Dimensioned Photos or Drawings of Antennas

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

Tx1 Antenna Dimensioned Drawing:



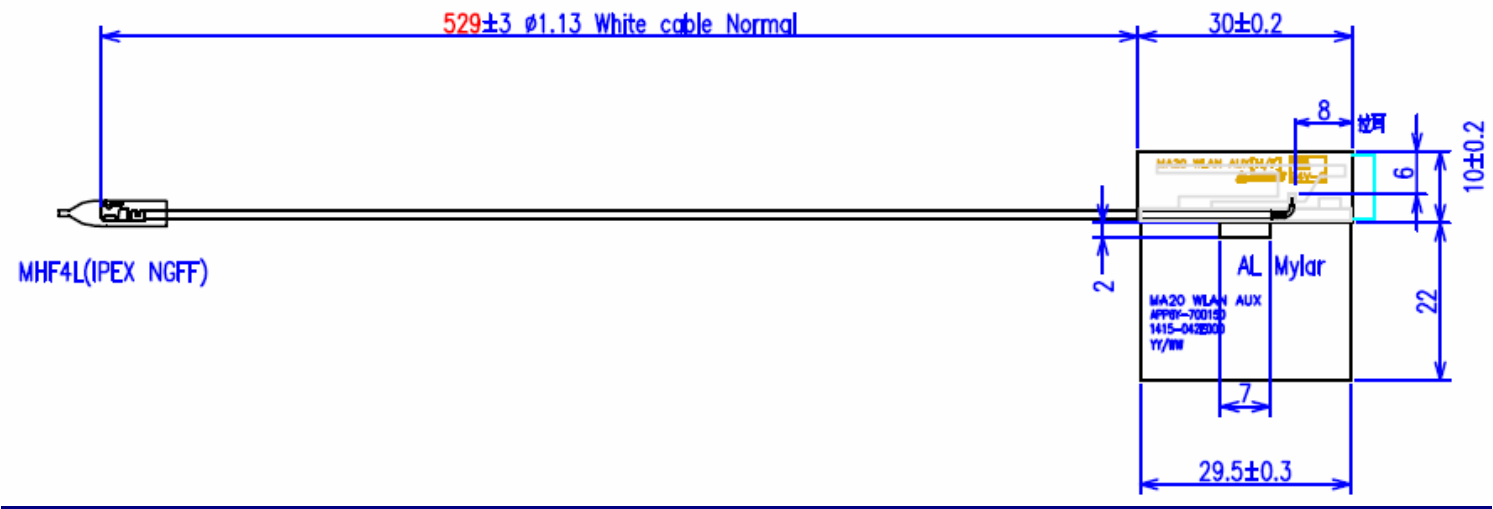
Tx1 Antenna Photo:



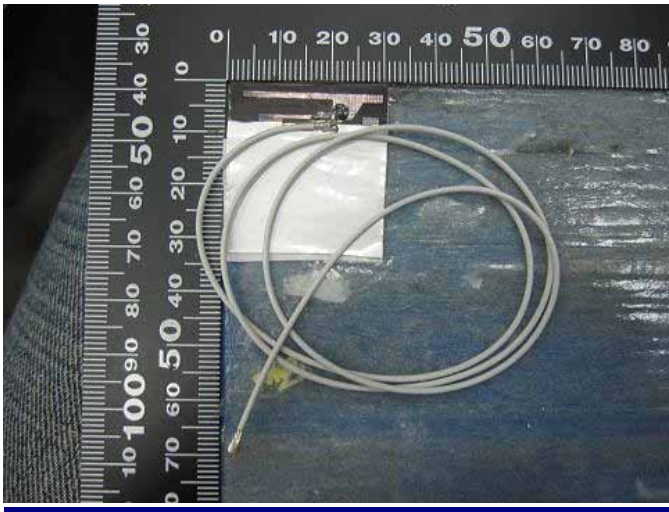
TX1

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

Tx2 (or Rx2) Antenna Dimensioned Drawing:



Tx2 (or Rx2) Antenna Photo:

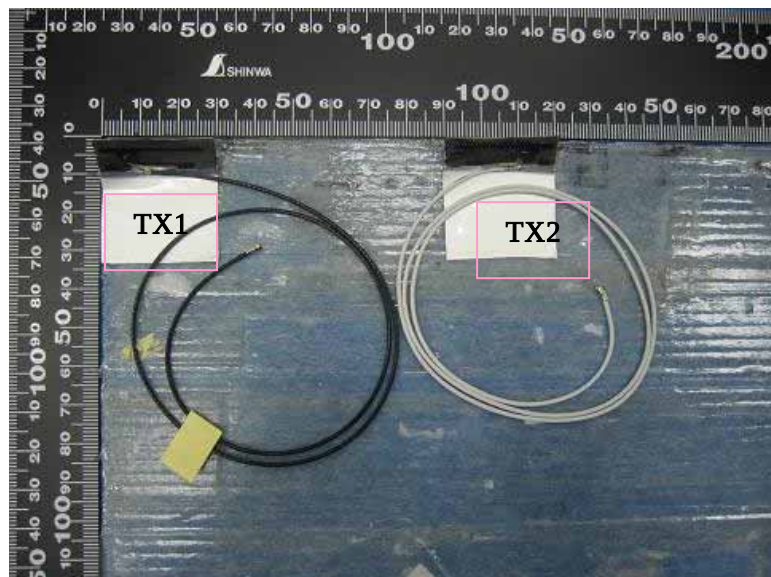


TX2

Include front view photo of all 2 antennas here.

Antenna Manufacturer: ACON

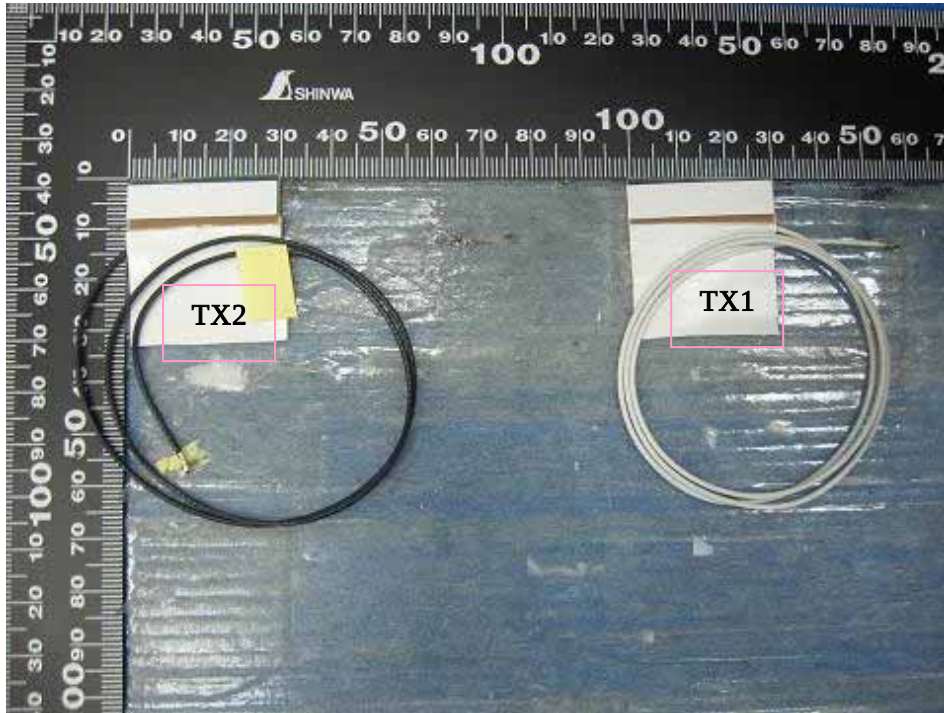
Antenna Part Number: APP6Y-700149(Tx1), APP6Y-700150(Tx2 or Rx2)



Include back view photo of all 2 antennas here.

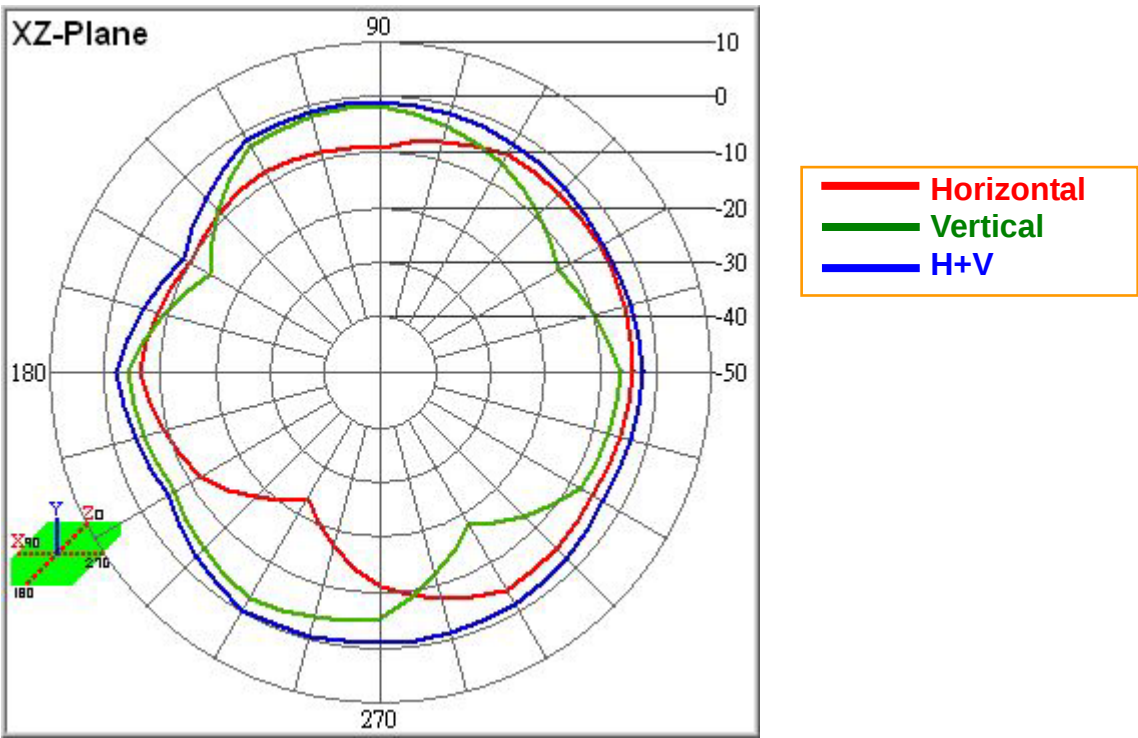
Antenna Manufacturer: ACON

Antenna Part Number: APP6Y-700149(Tx1), APP6Y-700150(Tx2 or Rx2)

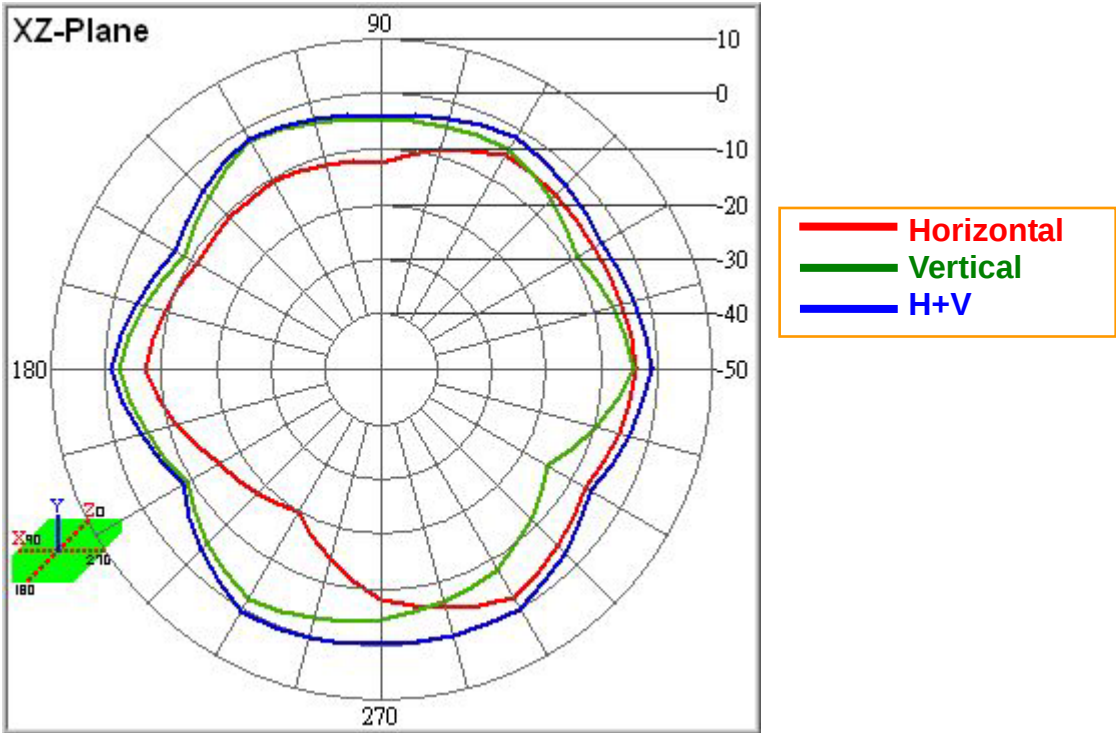


Section 3. Radiation characteristics of antennae Loaded in Host Platform

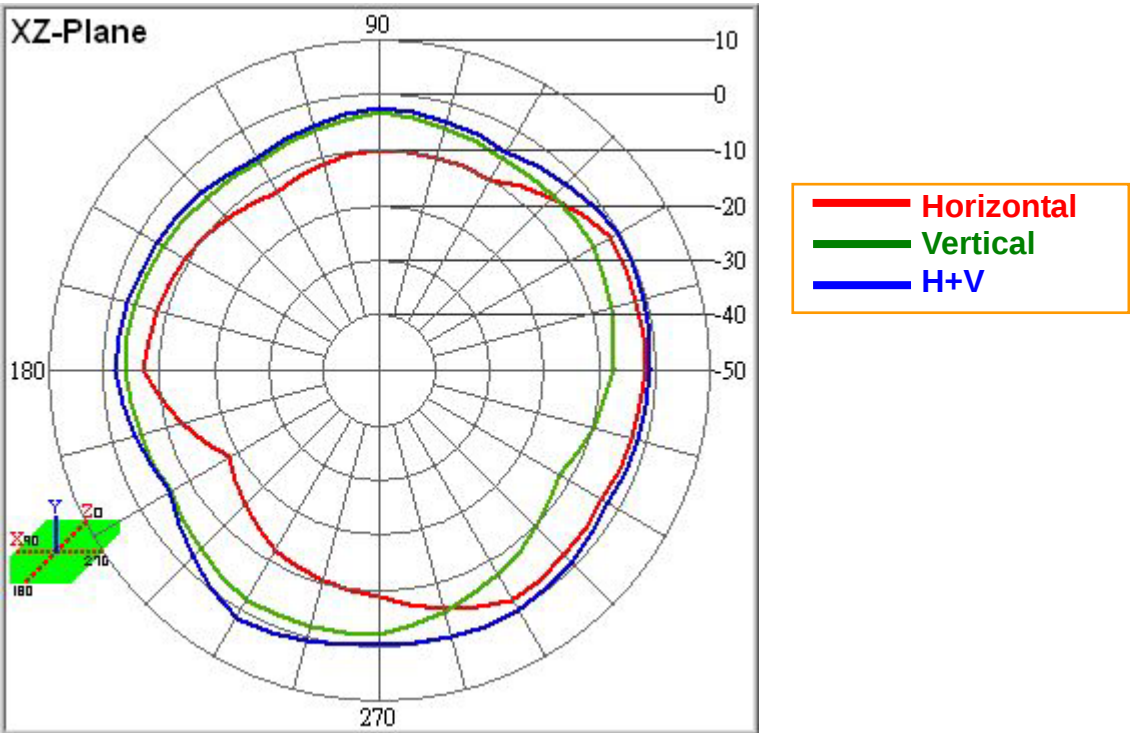
Tx1 antenna: 2400 MHz

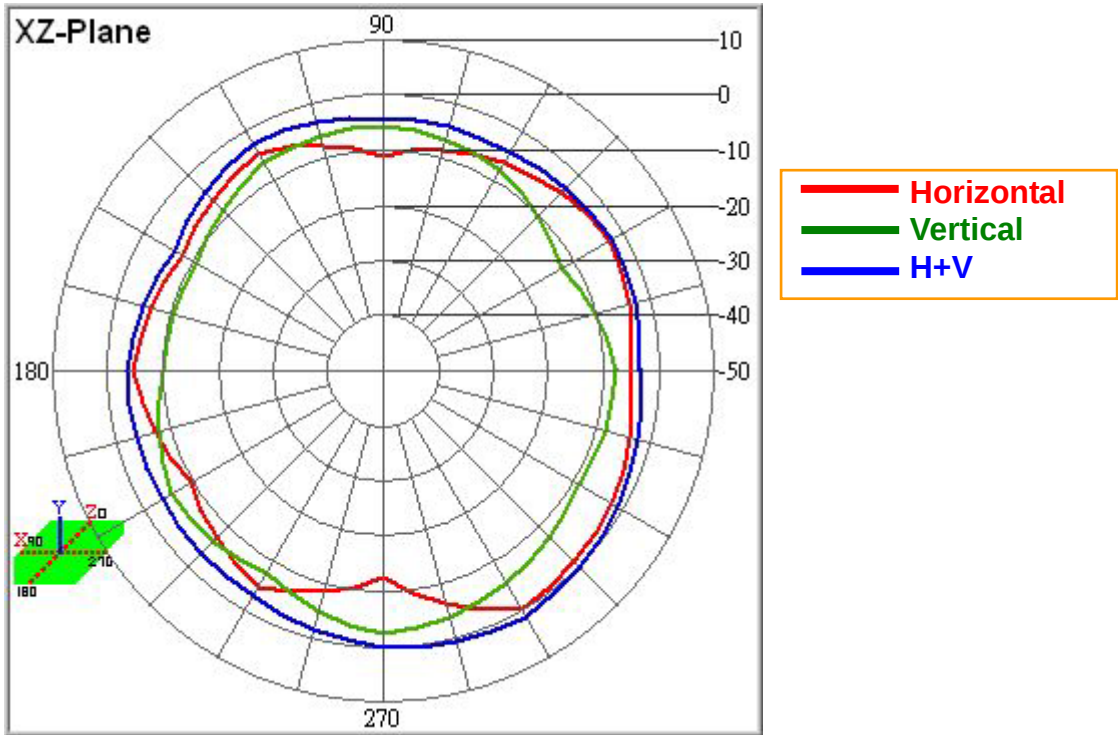


Center Frequency	2400 MHz
Horizontal (dBi) peak	-3.90
Vertical (dBi) peak	-1.48
H + V (dBi) peak	0.02

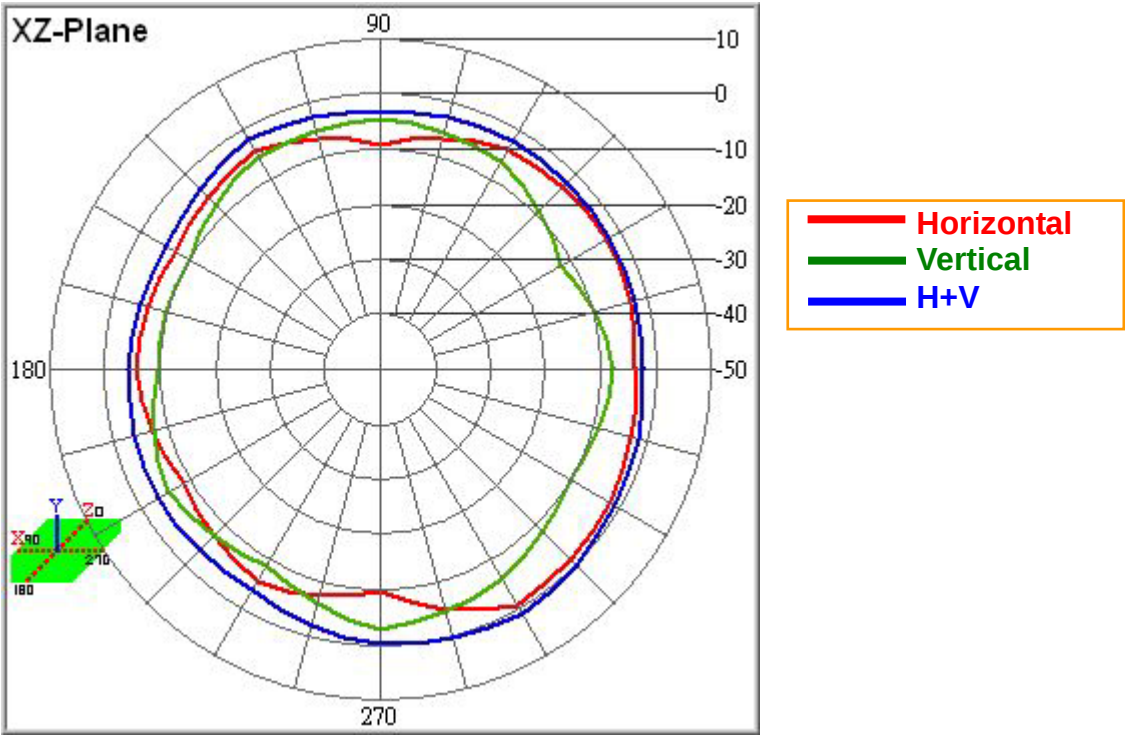


Center Frequency	2450 MHz
Horizontal (dBi) peak	-2.23
Vertical (dBi) peak	-1.70
H + V (dBi) peak	0.97

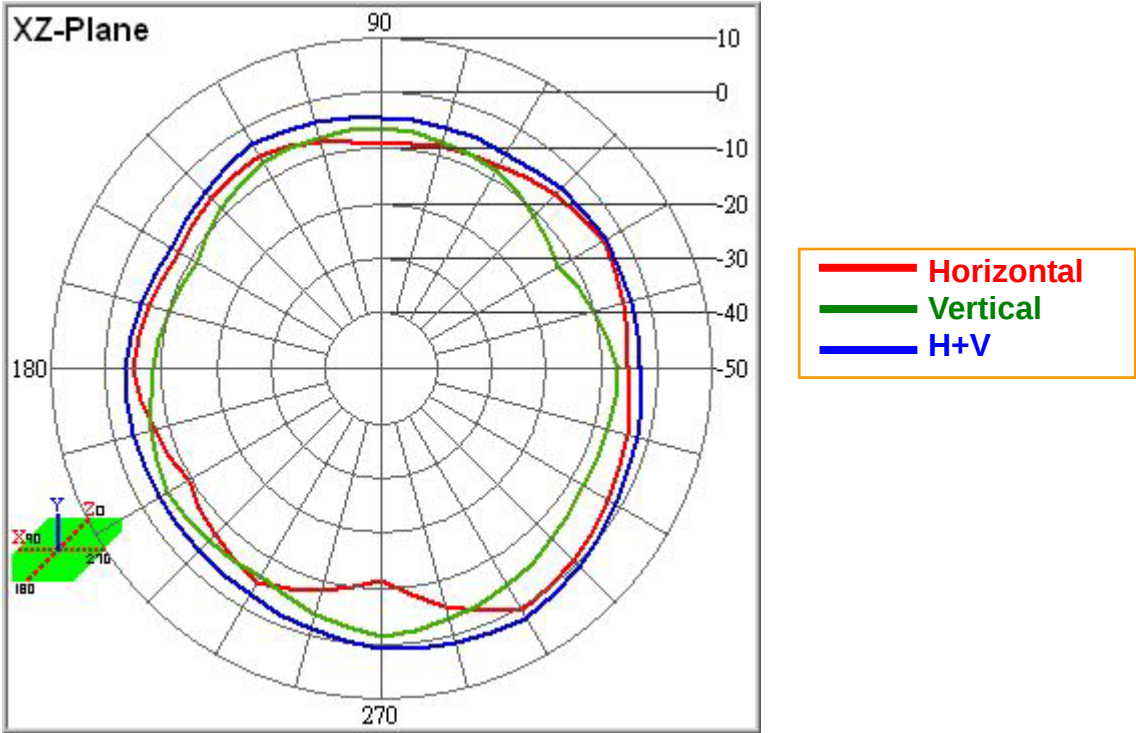




Center Frequency	2400 MHz
Horizontal (dBi) peak	0.51
Vertical (dBi) peak	-1.32
H + V (dBi) peak	1.01

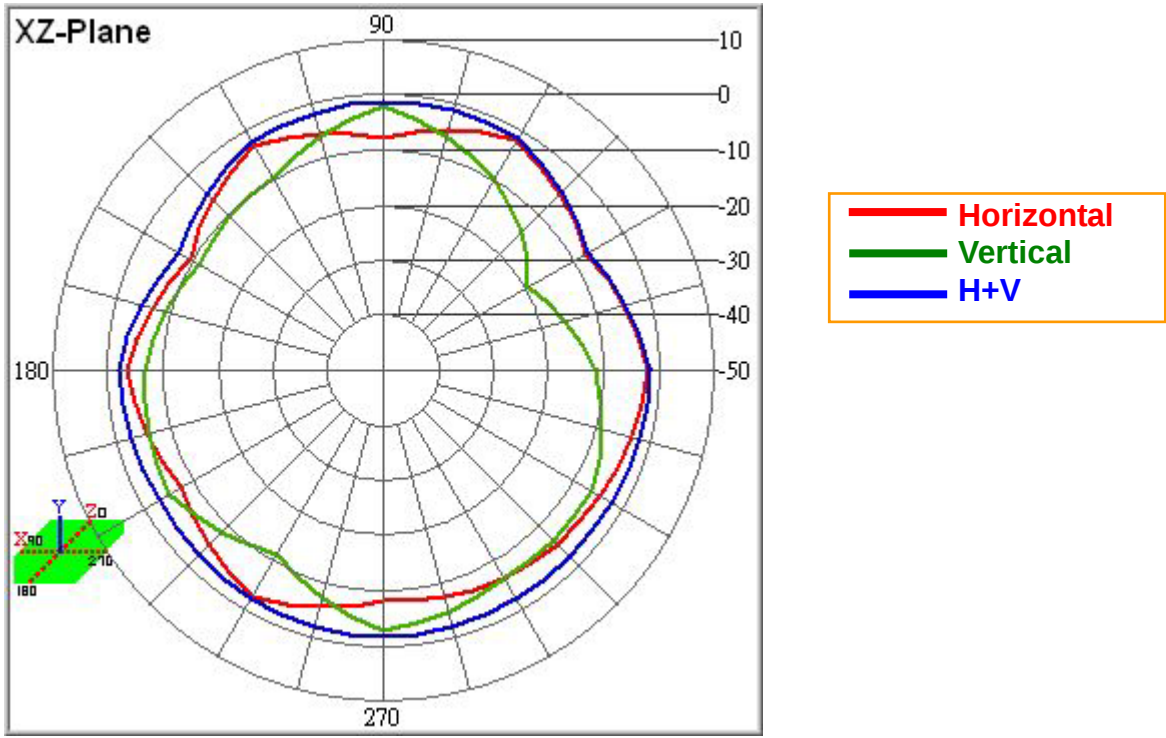


Tx2 antenna:2500 MHz

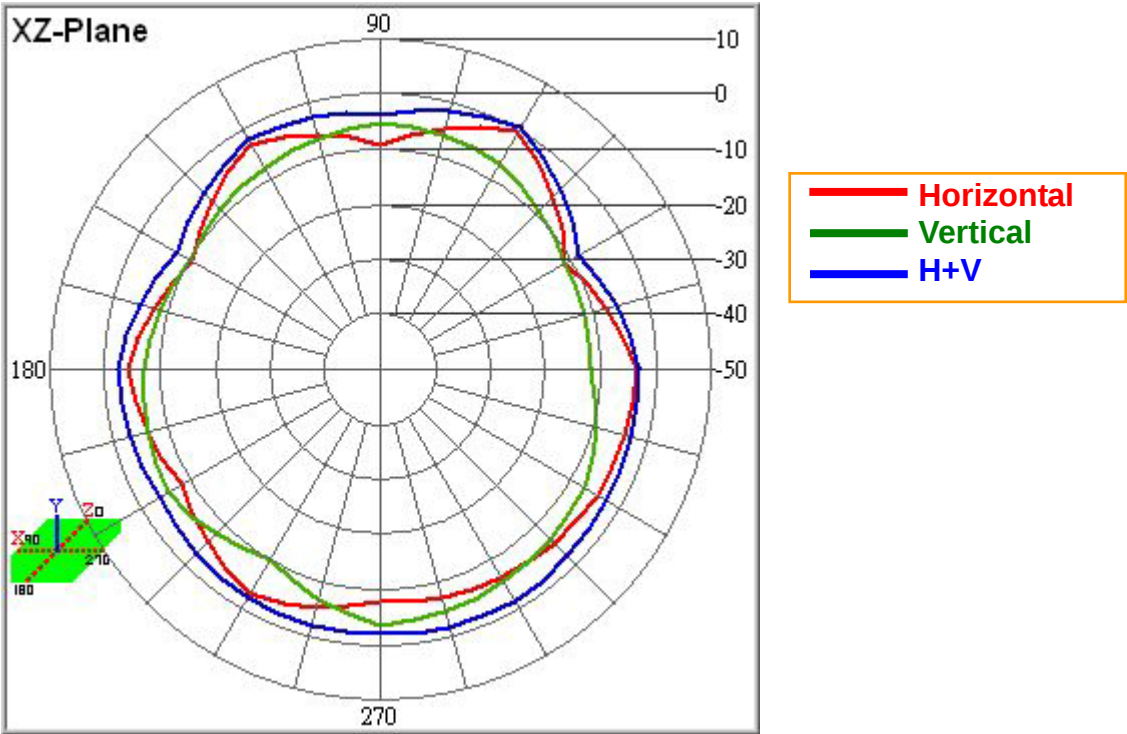


Center Frequency	2500 MHz
Horizontal (dBi) peak	1.03
Vertical (dBi) peak	1.21
H + V (dBi) peak	1.51

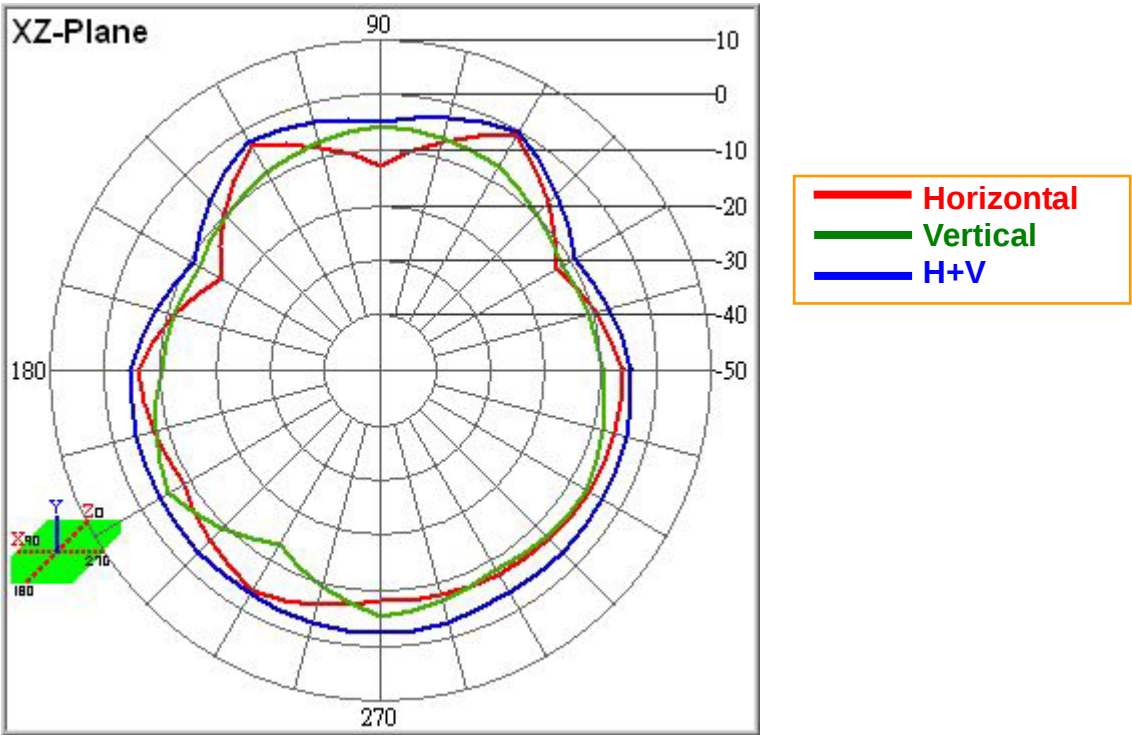
Tx1 antenna: 5150 MHz



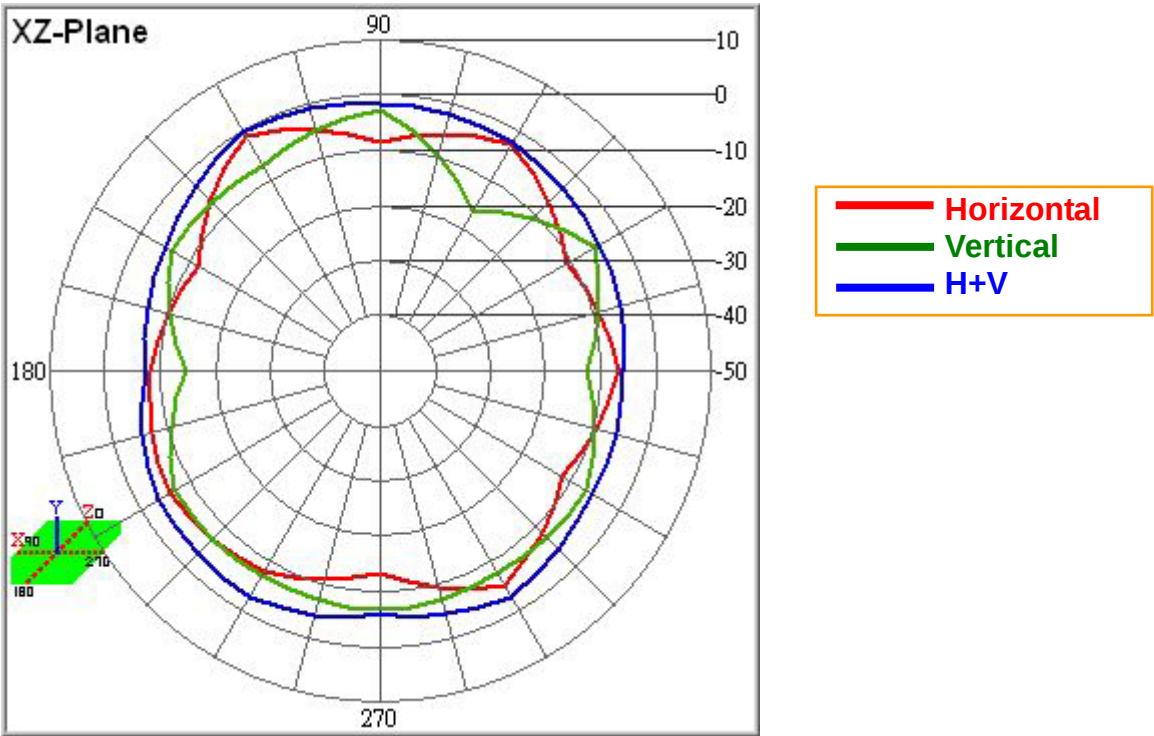
Center Frequency	5150 MHz
Horizontal (dBi) peak	-1.80
Vertical (dBi) peak	-2.10
H + V (dBi) peak	-1.10



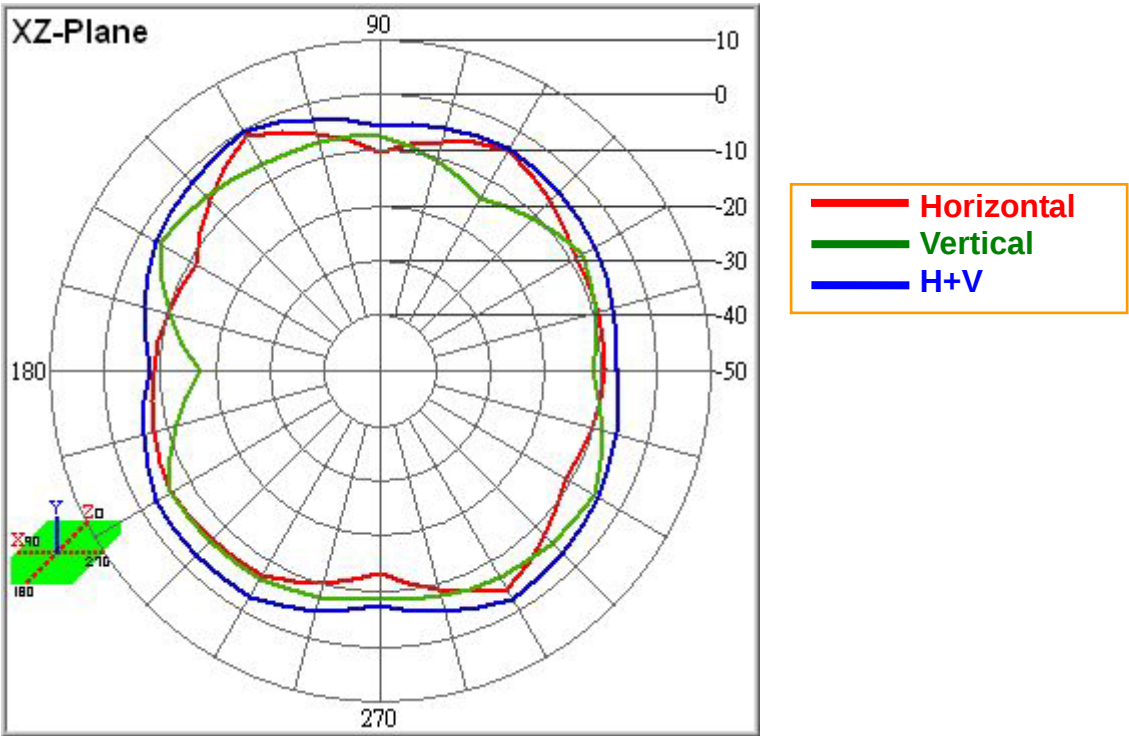
Center Frequency	5250 MHz
Horizontal (dBi) peak	-0.22
Vertical (dBi) peak	-3.55
H + V (dBi) peak	0.63



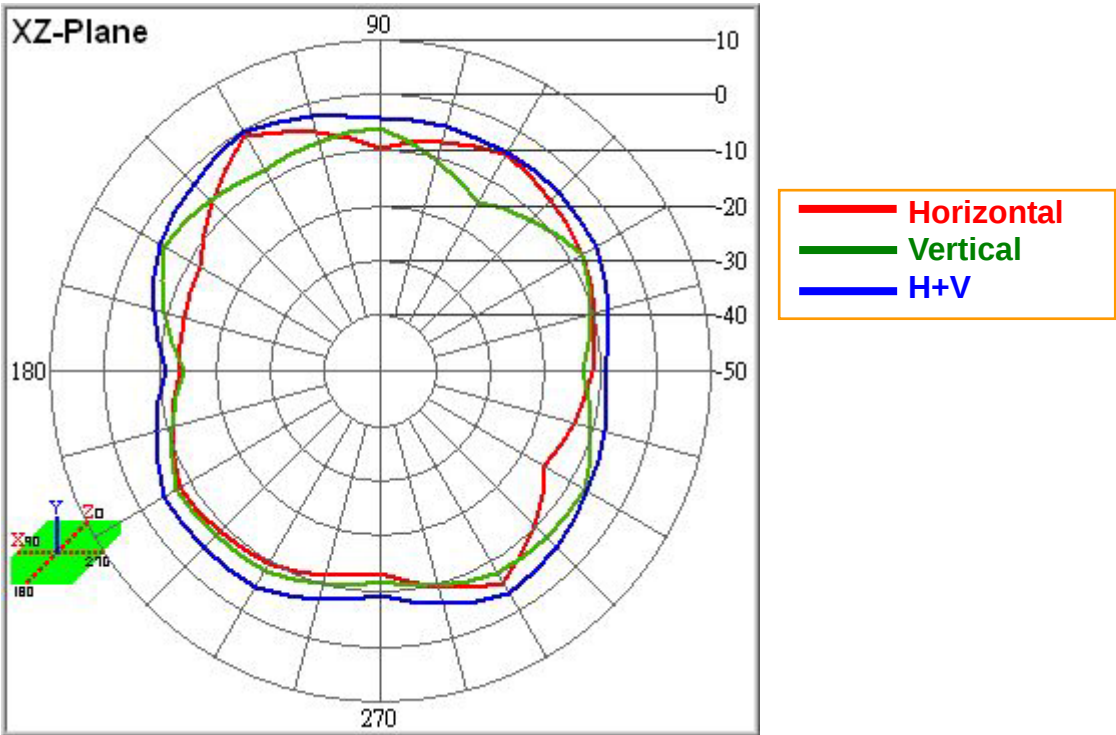
Center Frequency	5350 MHz
Horizontal (dBi) peak	-0.86
Vertical (dBi) peak	-5.19
H + V (dBi) peak	0.02



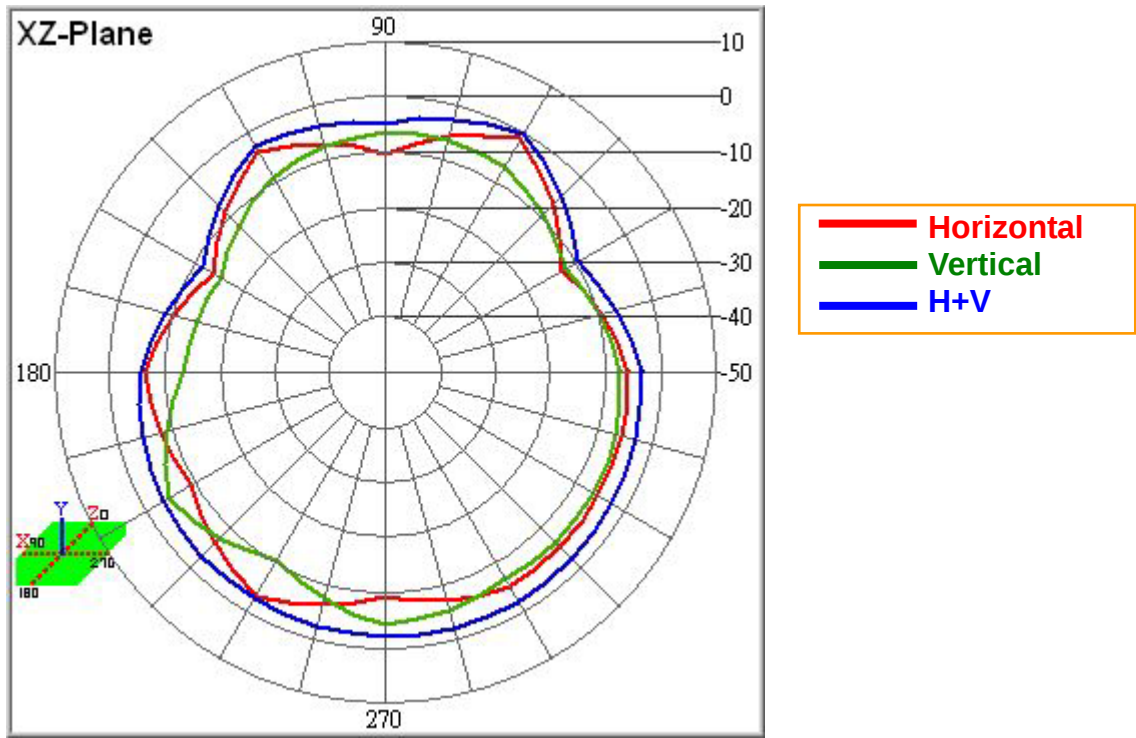
Center Frequency	5150 MHz
Horizontal (dBi) peak	-0.92
Vertical (dBi) peak	-2.58
H + V (dBi) peak	0.03



Center Frequency	5250 MHz
Horizontal (dBi) peak	-0.96
Vertical (dBi) peak	-3.76
H + V (dBi) peak	0.03

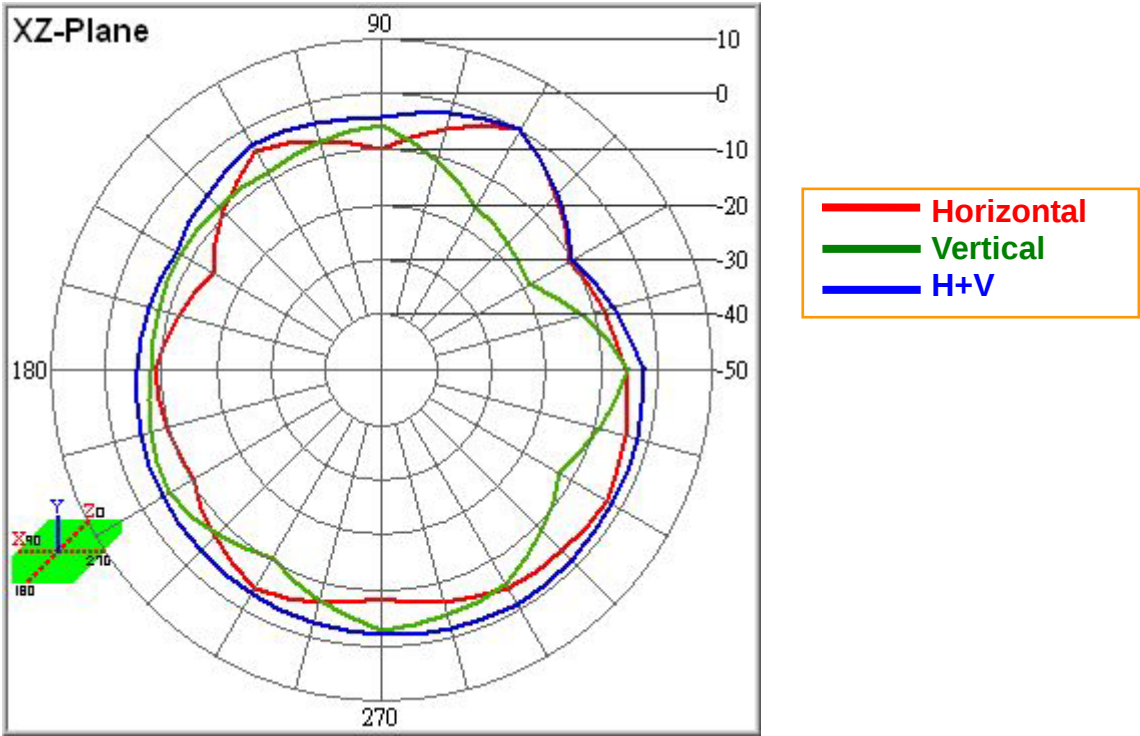


Center Frequency	5350 MHz
Horizontal (dBi) peak	-0.88
Vertical (dBi) peak	-4.55
H + V (dBi) peak	-0.12

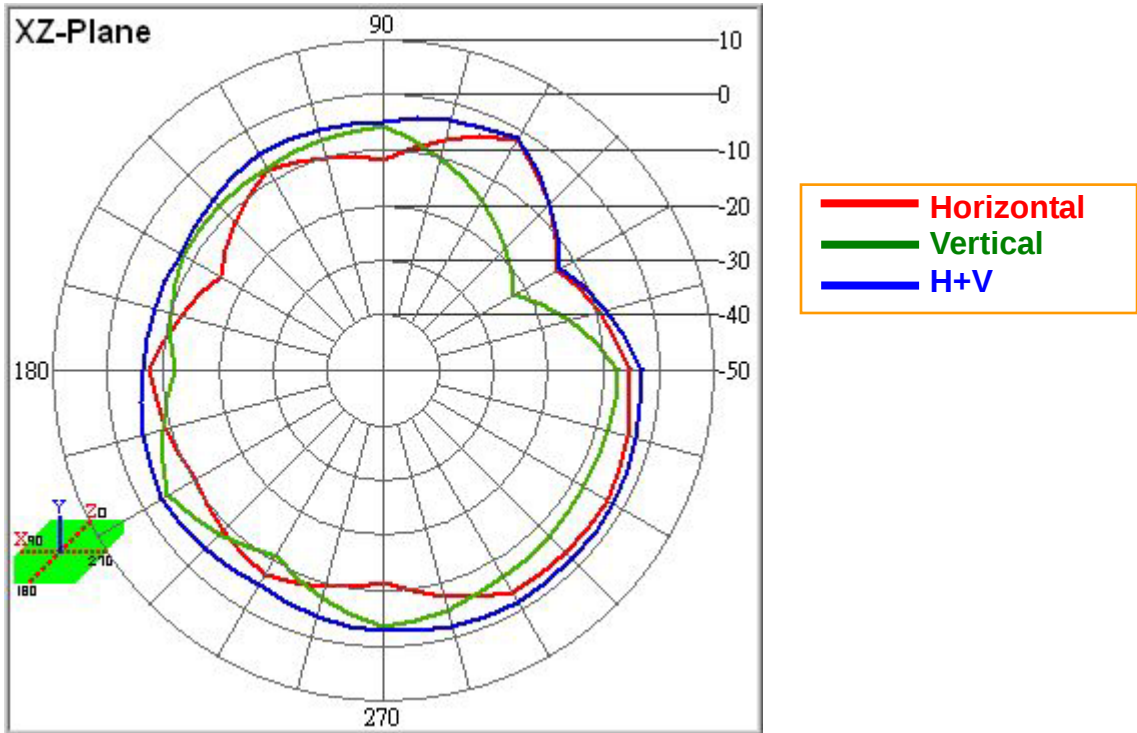


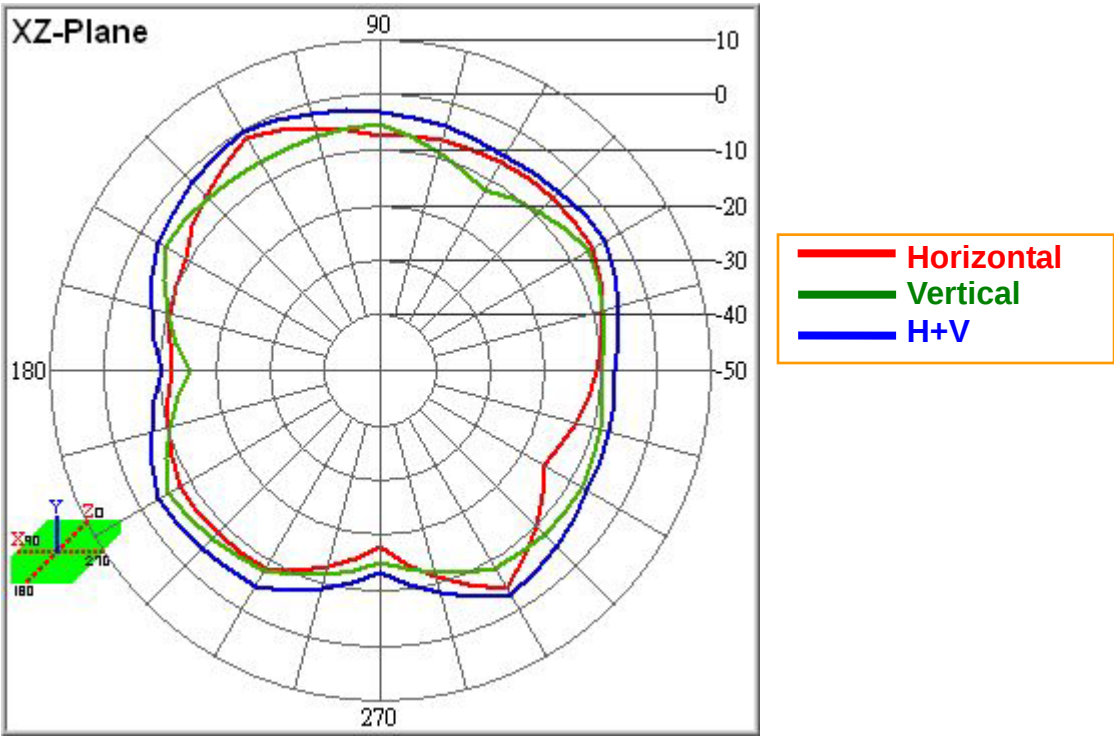
Center Frequency	5470 MHz
Horizontal (dBi) peak	-1.08
Vertical (dBi) peak	-4.07
H + V (dBi) peak	-0.06

Tx1 antenna: 5600 MHz

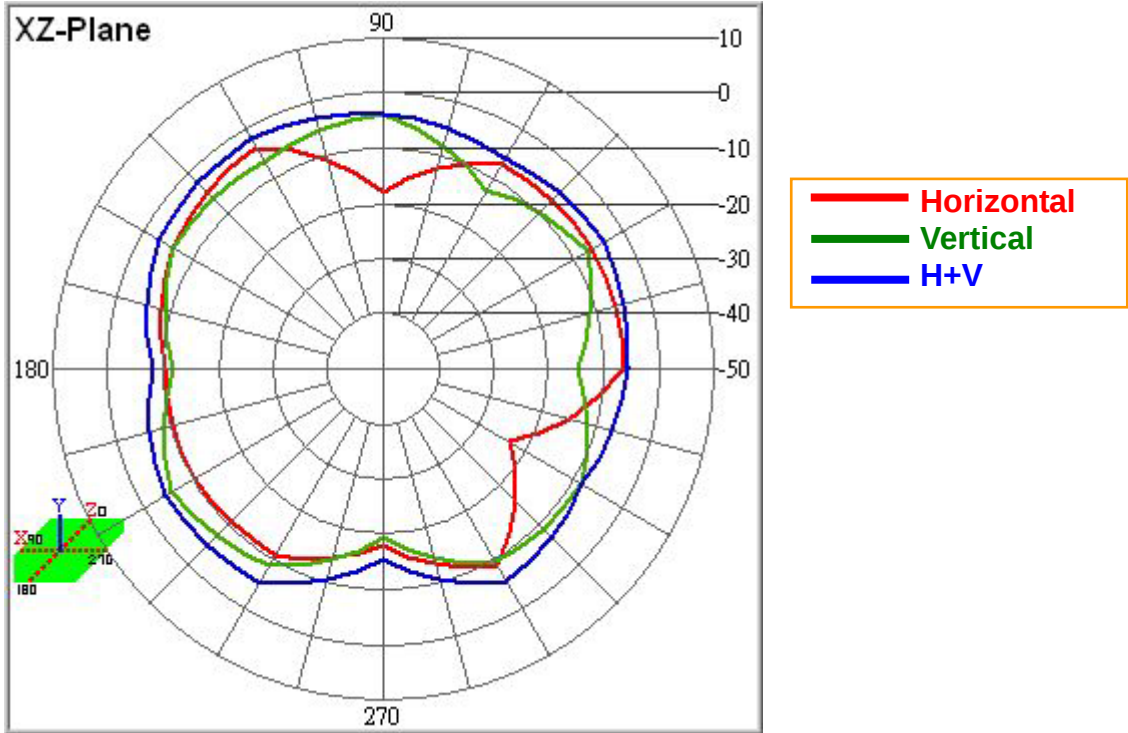


Center Frequency	5600 MHz
Horizontal (dBi) peak	0.40
Vertical (dBi) peak	-2.90
H + V (dBi) peak	0.50

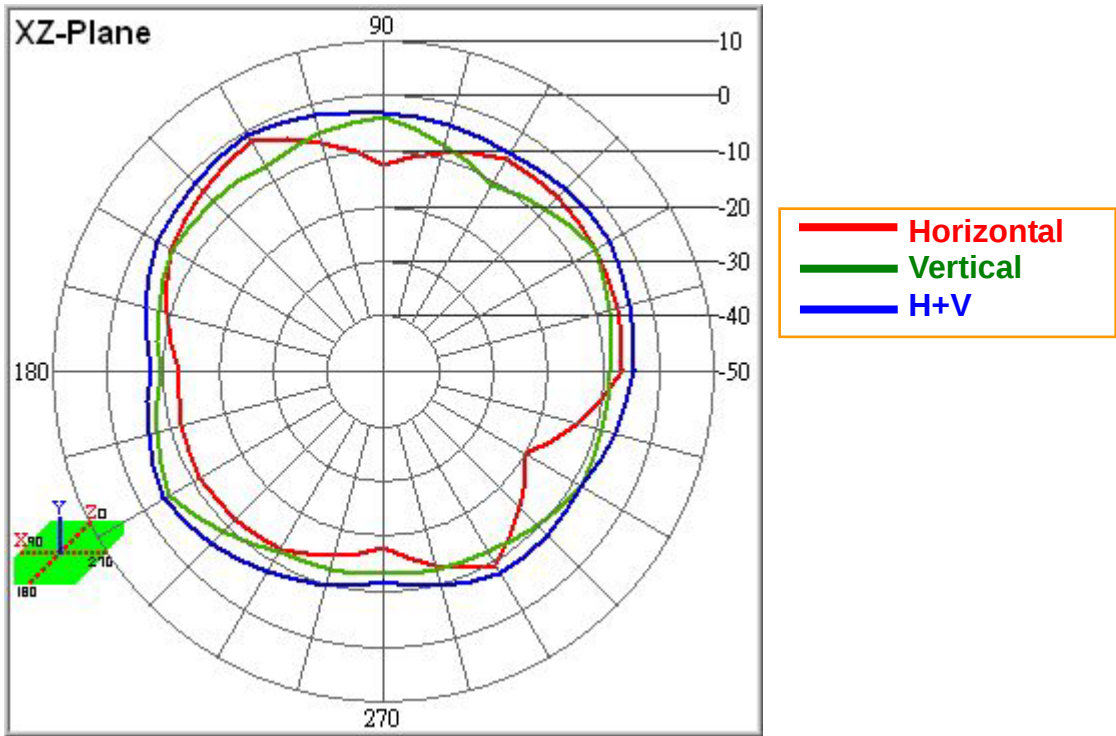




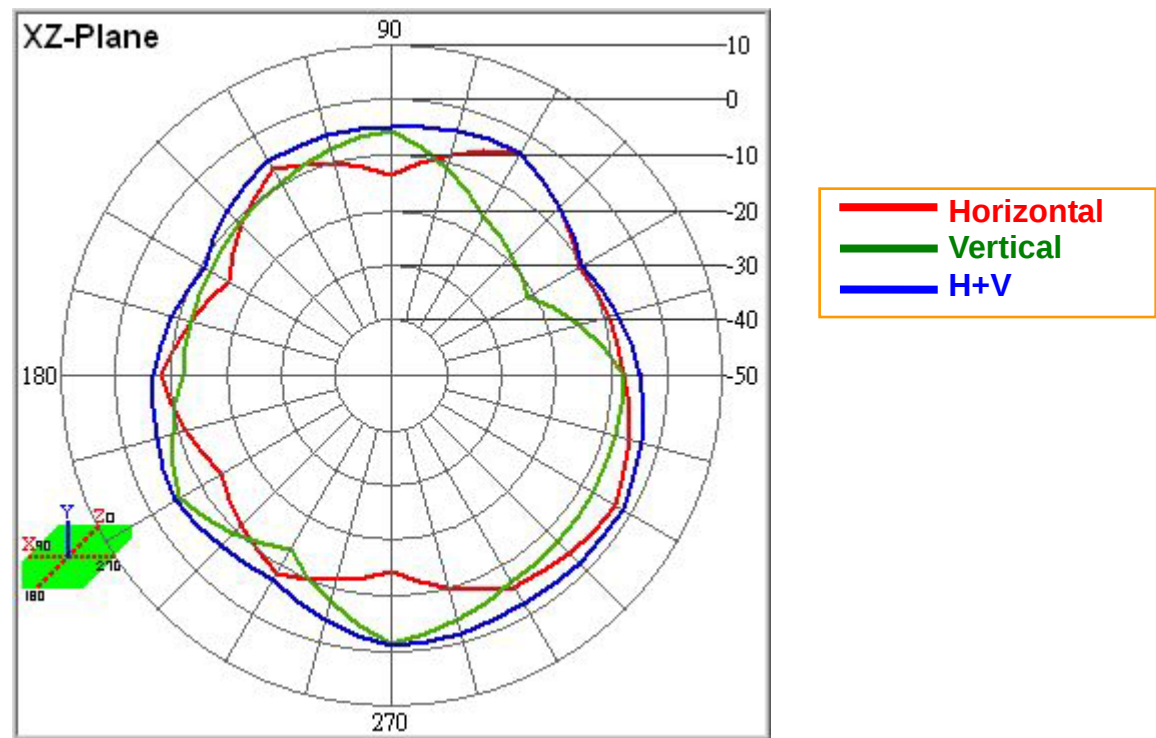
Center Frequency	5470 MHz
Horizontal (dBi) peak	-1.18
Vertical (dBi) peak	-4.90
H + V (dBi) peak	-0.06



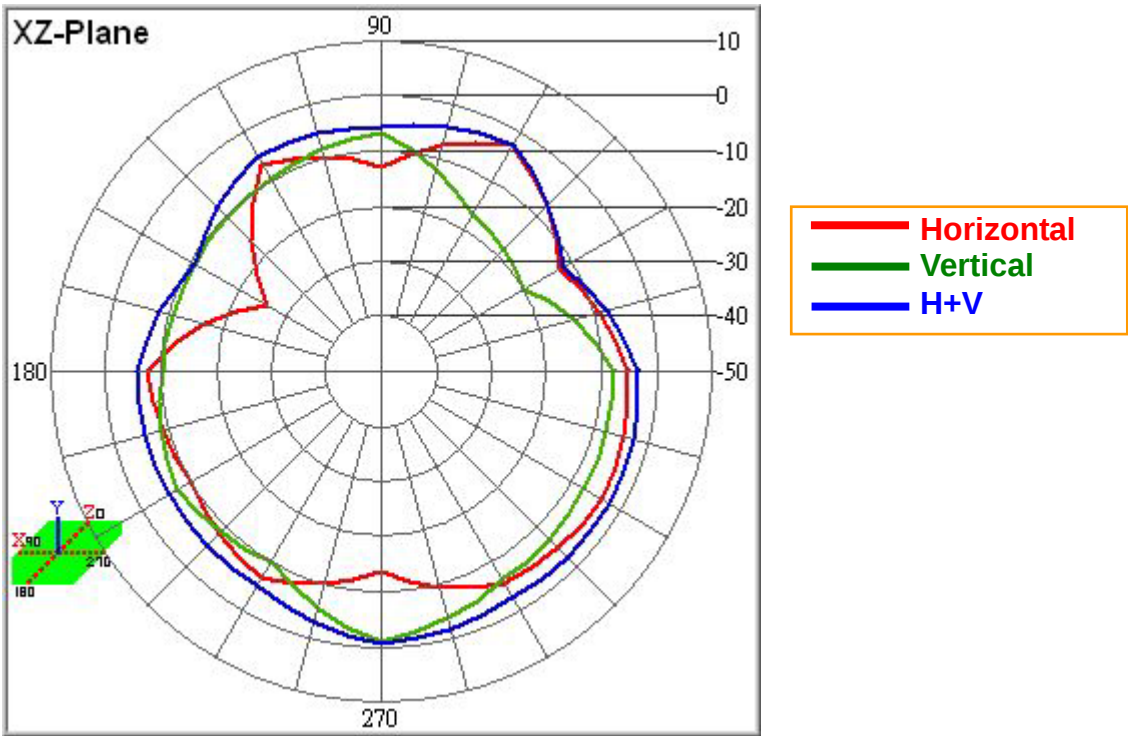
Center Frequency	5600 MHz
Horizontal (dBi) peak	-3.63
Vertical (dBi) peak	-3.94
H + V (dBi) peak	-1.86



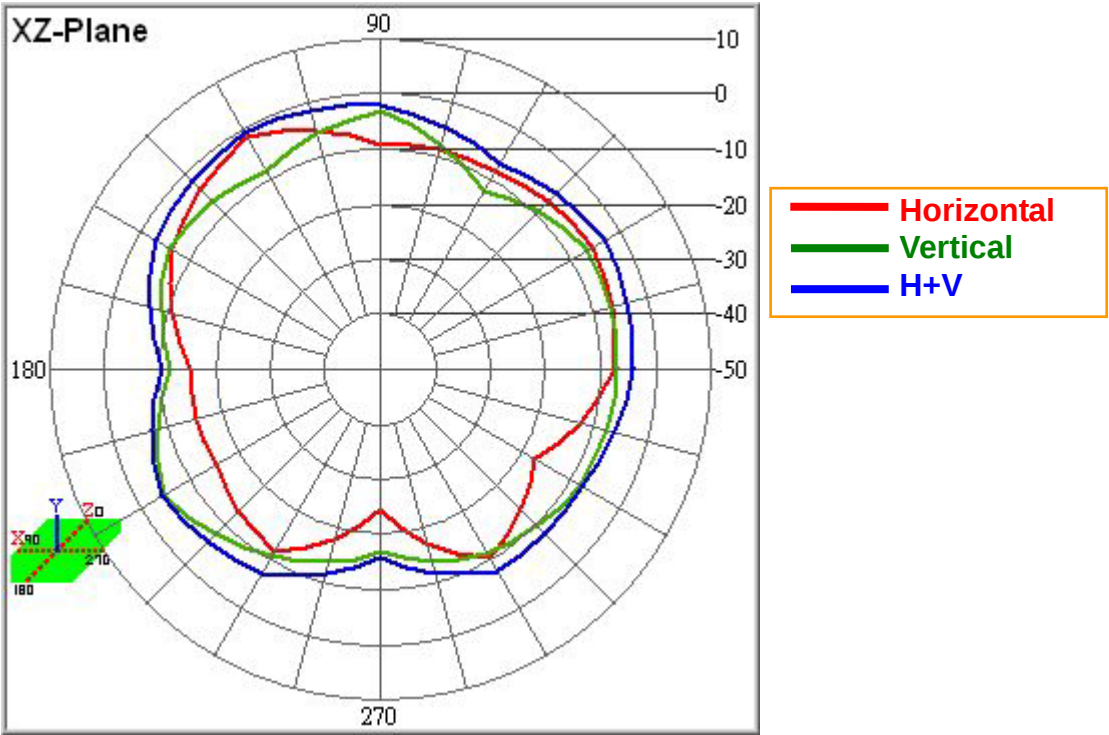
Center Frequency	5725 MHz
Horizontal (dBi) peak	-1.66
Vertical (dBi) peak	-3.80
H + V (dBi) peak	-0.54



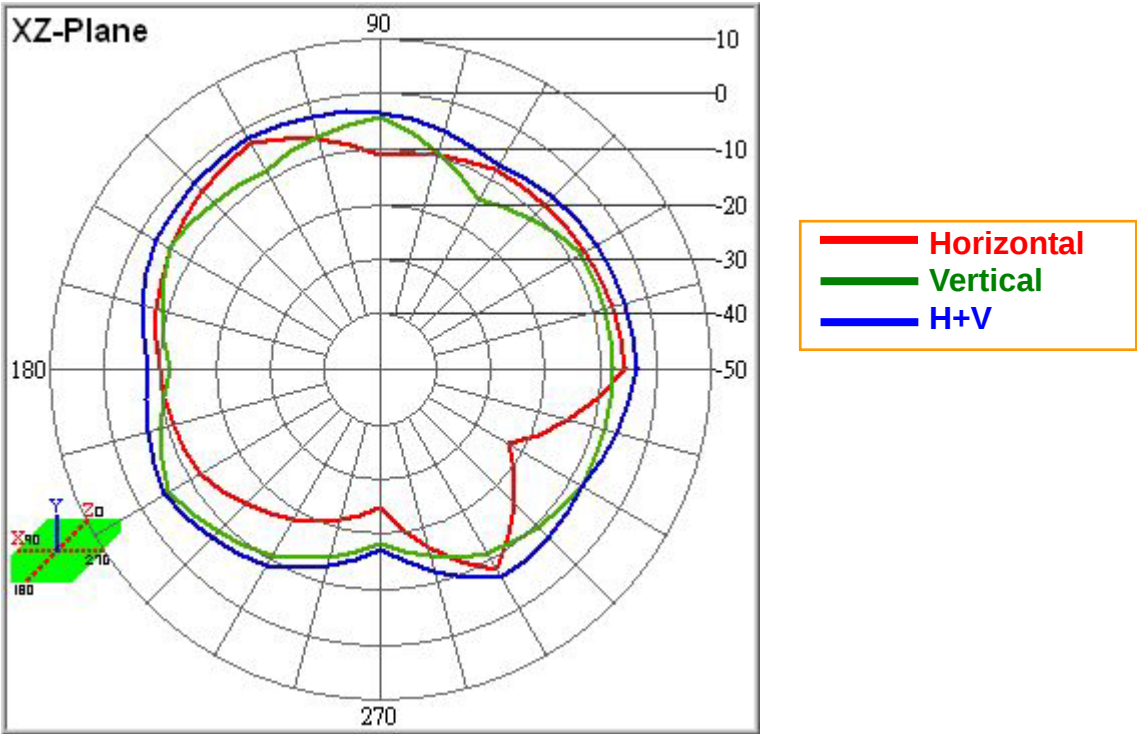
Center Frequency	5800MHz
Horizontal (dBi) peak	-2.98
Vertical (dBi) peak	-1.24
H + V (dBi) peak	-0.81



Center Frequency	5850 MHz
Horizontal (dBi) peak	-2.51
Vertical (dBi) peak	-0.88
H + V (dBi) peak	-0.64



Center Frequency	5800 MHz
Horizontal (dBi) peak	-1.38
Vertical (dBi) peak	-3.08
H + V (dBi) peak	-0.58



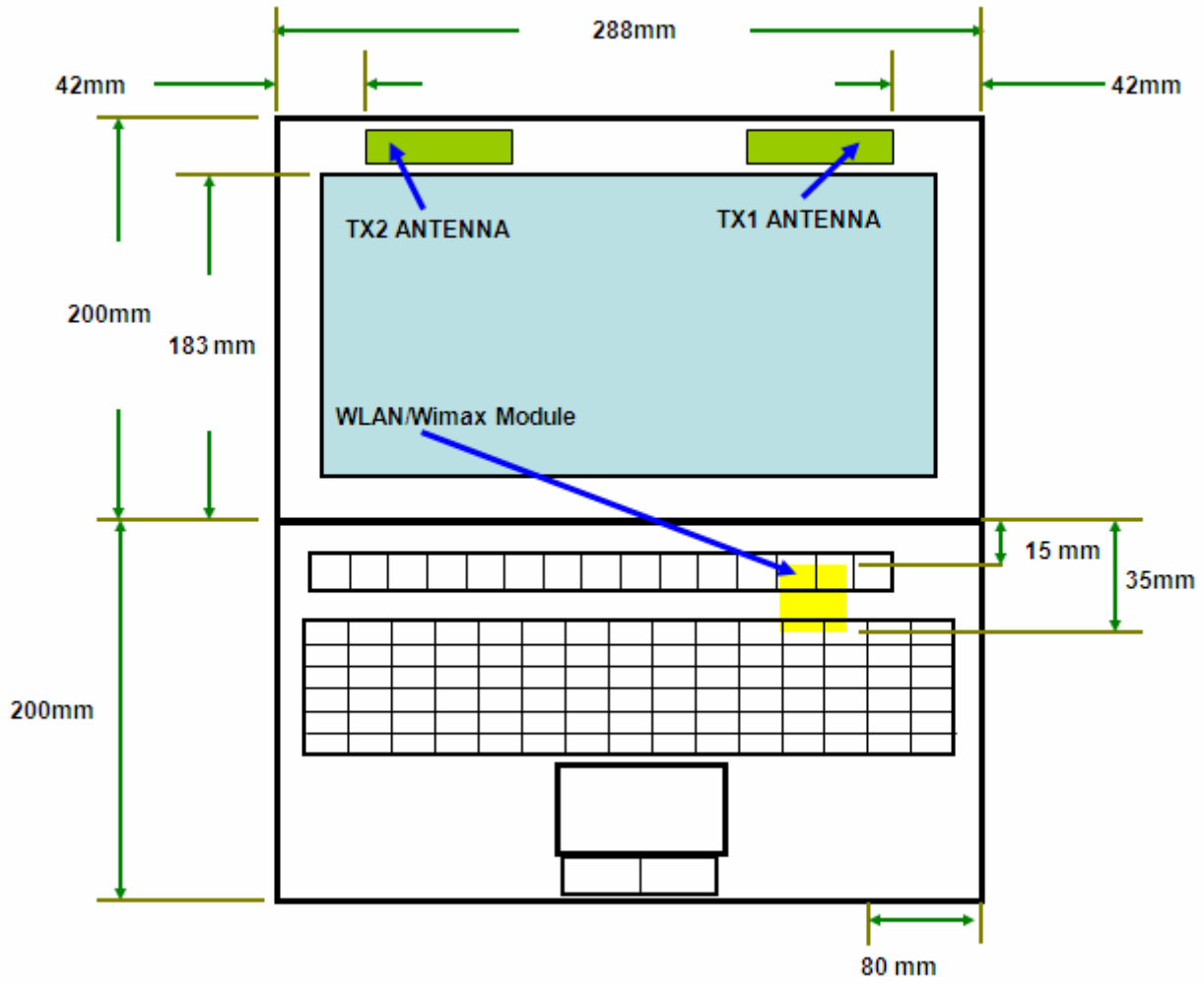
Center Frequency	5850 MHz
Horizontal (dBi) peak	-2.64
Vertical (dBi) peak	-4.11
H + V (dBi) peak	-1.59

Section 4. Host Platform Information

OEM / ODM Host platform: (Pegatron/ MA20) platform correlated to antenna data
Rating Label Photo:

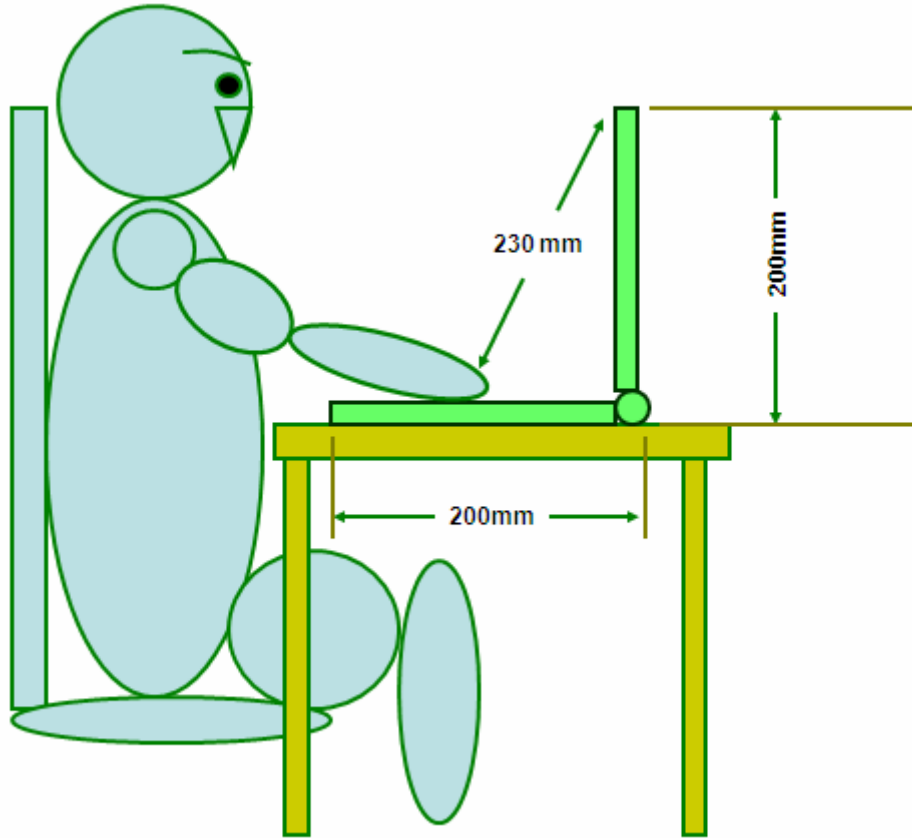
Section 5. Antenna Host Platform Location Information

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.



Section 6. Antenna dimensional information for SAR evaluation

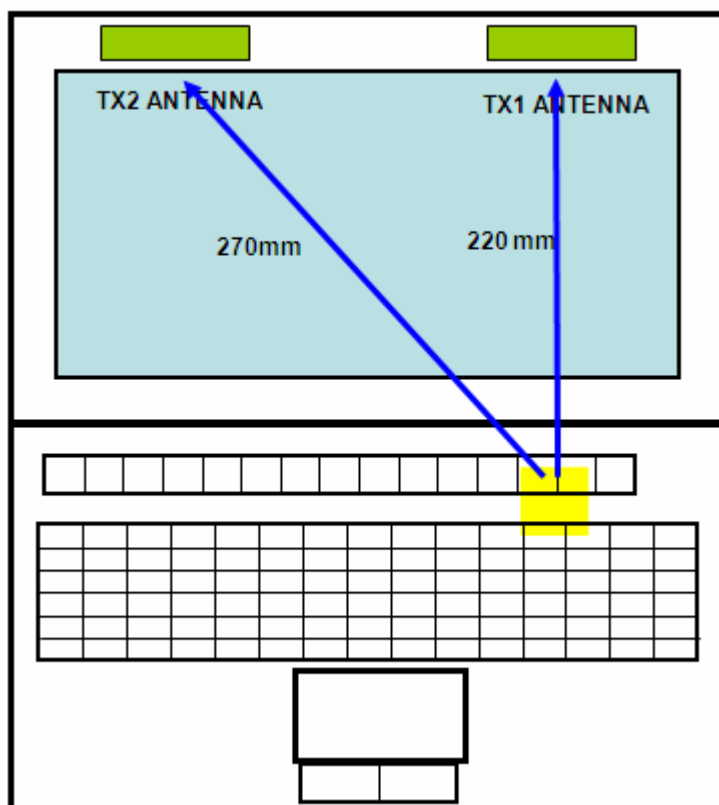
Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between the transmit antennas and the user (excluding hands, wrist, feet, and ankle)



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						
Azerbaijan						
Cambodia						
Canada						
Croatia						
Indonesia						
Israel						
Malaysia						
Moldova						
Philippines						
Singapore						Telecommunication Equipment Dealer License Required
South Africa						
Taiwan						
USA						
Vietnam						