

FJ3

Regulatory MIMO Antenna Information

(English Language Required for Intel Regulatory Review / Approval)

| | |
|--------------------|---|
| Platform | JET |
| Platform Owner | Quanta |
| Brand Name | Quanta |
| Model Name | FJ3 |
| ODM | Quanta |
| Target Launch Date | 2008/ 03/ 07 |
| | |
| Antenna | |
| Brand Name | Wha Yu |
| Part Number | <input checked="" type="checkbox"/> Tx1 Antenna(Main): DQ652013200 |
| | <input checked="" type="checkbox"/> Tx2 Antenna(AUX): DQ652013100 |
| | <input checked="" type="checkbox"/> Tx3 (or Rx3) Antenna(Middle): DQ652013300 |
| | |
| Module | |
| With WLAN Module | <input type="checkbox"/> WM3B2200BG |
| (Check Box) | <input type="checkbox"/> WM3B2915ABG |
| | <input type="checkbox"/> WM3945ABG |
| | <input type="checkbox"/> 4965AGN |
| | <input type="checkbox"/> 4965AG_ |
| | <input type="checkbox"/> 533ANX Family |
| | <input type="checkbox"/> 512ANX Family |
| | <input checked="" type="checkbox"/> 533AN Family |
| | <input type="checkbox"/> 512AN Family |

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

NOTE:

(*) if 3rd antenna is Rx only (e.g. receive only for 4965AGN) then peak gain and cable loss not required

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) |
|--|-------------------|--------------------|---|---|---|-------------------------|---------------------------------|
| Main Antenna Vendor P/N: C680-520132-A QCI P/N: DQ652013200 | Whayu | PIFA (RoHS:Yes) | (P/N: U.FL-2LP-066) 50 ohm Coaxial. length:70.5cm diameter: 1.13mm Connector: HRS (RoHS: Yes) | 2300-2450MHz 0.16 dBi (peak) | 2300-2450MHz 2.28 dBi (peak) | 2300-2450MHz 2.0 max | 2300-2450MHz 2.21 dBi (peak) |
| | | | | 2500-2700MHz 1.41 dBi (peak) | 2500-2700MHz 3.53 dBi (peak) | 2500-2700MHz 2.0 max | 2500-2700MHz 2.21 dBi (peak) |
| | | | | 3300-3800MHz 0.64 dBi (peak) | 3300-3800MHz 3.27 dBi (peak) | 3300-3800MHz 2.0 max | 3300-3800MHz 2.74 dBi (peak) |
| | | | | 5150-5350MHz -0.63 dBi (peak) | 5150-5350MHz 2.84 dBi (peak) | 5150-5350MHz 2.0 max | 5150-5350MHz 3.62 dBi (peak) |
| | | | | 5475-5725MHz -1.47 dBi (peak) | 5475-5725MHz 2.00 dBi (peak) | 5475-5725MHz 2.0 max | 5475-5725MHz 3.62 dBi (peak) |
| | | | | 5750-5875MHz -0.98 dBi (peak) | 5750-5875MHz 2.86 dBi (peak) | 5750-5875MHz 2.0 max | 5750-5875MHz 4.00 dBi (peak) |
| Auxiliary antenna Vendor P/N : C680-520131-A QCI P/N : DQ652013100 | Whayu | PIFA (RoHS:Yes) | (P/N: U.FL-2LP-066) 50 ohm Coaxial. length: 60.8cm diameter: 1.13mm Connector: HRS (RoHS: Yes) | 2300-2450MHz 2.42 dBi (peak) | 2300-2450MHz 4.24 dBi (peak) | 2300-2450MHz 2.0 max | 2300-2450MHz 1.91 dBi (peak) |
| | | | | 2500-2700MHz 1.02 dBi (peak) | 2500-2700MHz 2.84 dBi (peak) | 2500-2700MHz 2.0 max | 2500-2700MHz 1.91 dBi (peak) |
| | | | | 3300-3800MHz -0.35 dBi (peak) | 3300-3800MHz 1.92 dBi (peak) | 3300-3800MHz 2.0 max | 3300-3800MHz 2.38 dBi (peak) |
| | | | | 5150-5350MHz -0.60 dBi (peak) | 5150-5350MHz 2.39 dBi (peak) | 5150-5350MHz 2.0 max | 5150-5350MHz 3.14 dBi (peak) |
| | | | | 5475-5725MHz 0.18 dBi (peak) | 5475-5725MHz 3.17 dBi (peak) | 5475-5725MHz 2.0 max | 5475-5725MHz 3.14 dBi (peak) |
| | | | | 5750-5875MHz -0.21 dBi (peak) | 5750-5875MHz 3.10 dBi (peak) | 5750-5875MHz 2.0 max | 5750-5875MHz 3.47 dBi (peak) |
| Middle Antenna Vendor P/N: C680-520133-A QCI P/N: DQ652013300 | Whayu | PIFA (RoHS:Yes) | (P/N: U.FL-2LP-066) 50 ohm Coaxial. length:49.4cm diameter: 1.13mm Connector: HRS (RoHS: Yes) | 2300-2450MHz -0.50 dBi (peak) | 2300-2450MHz 0.98 dBi (peak) | 2300-2450MHz 2.0 max | 2300-2450MHz 1.57 dBi (peak) |
| | | | | 2500-2700MHz 2.04 dBi (peak) | 2500-2700MHz 3.52 dBi (peak) | 2500-2700MHz 2.0 max | 2500-2700MHz 1.57 dBi (peak) |
| | | | | 3300-3800MHz -1.11 dBi (peak) | 3300-3800MHz 0.73 dBi (peak) | 3300-3800MHz 2.0 max | 3300-3800MHz 1.95 dBi (peak) |
| | | | | 5150-5350MHz -0.13 dBi (peak) | 5150-5350MHz 2.30 dBi (peak) | 5150-5350MHz 2.0 max | 5150-5350MHz 2.58 dBi (peak) |
| | | | | 5475-5725MHz -1.14 dBi (peak) | 5475-5725MHz 1.29 dBi (peak) | 5475-5725MHz 2.0 max | 5475-5725MHz 2.58 dBi (peak) |
| | | | | 5750-5875MHz -0.59 dBi (peak) | 5750-5875MHz 2.10 dBi (peak) | 5750-5875MHz 2.0 max | 5750-5875MHz 2.85 dBi (peak) |

NOTE:

(*) If Rx3 only (3rd antenna receives only, e.g. for 4965AGN) then the information marked with * is not required

Antenna Peak Gain Table:

| Frequency (MHz) | Tx1 antenna | | Tx2 Antenna | | Tx3 (or Rx3) Antenna | |
|-----------------|------------------|----------------|------------------|----------------|----------------------|----------------|
| | Horizontal (dBi) | Vertical (dBi) | Horizontal (dBi) | Vertical (dBi) | Horizontal (dBi) | Vertical (dBi) |
| 2300 | -1.57 | -2.59 | -1.23 | -4.30 | -4.41 | -0.57 |
| 2400 | -0.43 | -0.38 | 2.16 | -1.07 | -4.25 | -0.50 |
| 2450 | 0.16 | -1.42 | 2.42 | -0.72 | -5.56 | -1.31 |
| 2500 | 0.86 | -1.02 | 0.52 | -3.30 | -4.82 | -0.13 |
| 2600 | 1.41 | -0.15 | 1.02 | -0.44 | -2.13 | 0.37 |
| 2700 | -0.26 | -0.45 | 0.60 | -0.97 | -1.88 | 2.04 |
| 3300 | 0.64 | -1.25 | -1.23 | -4.28 | -1.11 | -1.89 |
| 3500 | -0.93 | -1.78 | -0.71 | -2.17 | -3.34 | -4.49 |
| 3800 | -2.06 | -0.03 | -0.35 | -1.75 | -2.32 | -4.70 |
| 5150 | -1.68 | -1.27 | -0.73 | -3.06 | -3.49 | -3.67 |
| 5250 | -1.52 | -2.32 | -1.28 | -1.51 | -2.28 | -1.25 |
| 5350 | -0.63 | -3.48 | -0.77 | -0.60 | -0.13 | -2.45 |
| 5475 | -1.47 | -2.50 | 0.18 | -0.06 | -1.14 | -1.95 |
| 5600 | -1.68 | -1.91 | -0.47 | -0.52 | -3.23 | -1.75 |
| 5725 | -1.93 | -1.62 | -1.08 | -1.35 | -2.79 | -1.51 |
| 5750 | -1.30 | -1.87 | -1.31 | -1.99 | -2.48 | -1.58 |
| 5800 | -0.98 | -3.08 | -0.45 | -1.21 | -1.76 | -2.47 |
| 5875 | -1.18 | -1.98 | -0.21 | -1.58 | -0.59 | -3.09 |

- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/V
- If Rx3 only (3rd antenna receives only, e.g. for 4965AGN) then the information is not required for Rx3.

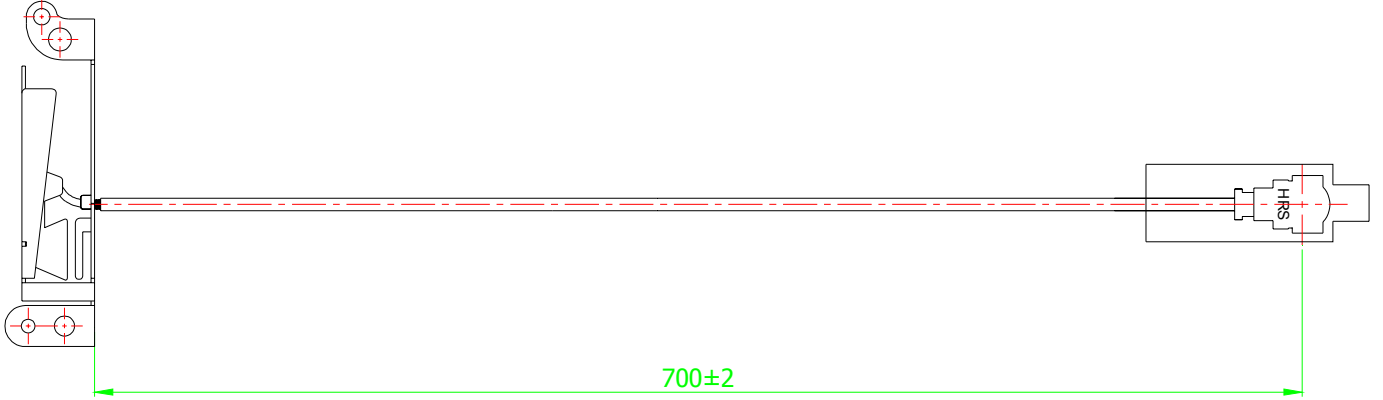
Antenna Average Gain Table:

| Frequency (MHz) | Tx1 antenna | | Tx2 Antenna | | Tx3 (or Rx3) Antenna | |
|-----------------|------------------|----------------|------------------|----------------|----------------------|----------------|
| | Horizontal (dBi) | Vertical (dBi) | Horizontal (dBi) | Vertical (dBi) | Horizontal (dBi) | Vertical (dBi) |
| 2300 | -6.95 | -7.03 | -5.90 | -7.75 | -8.17 | -8.21 |
| 2400 | -6.84 | -6.04 | -6.00 | -5.73 | -7.95 | -8.22 |
| 2450 | -7.11 | -5.54 | -5.06 | -6.44 | -9.44 | -8.96 |
| 2500 | -7.49 | -5.63 | -6.93 | -7.33 | -9.10 | -7.72 |
| 2600 | -7.22 | -5.65 | -5.73 | -6.71 | -7.74 | -7.43 |
| 2700 | -7.33 | -6.38 | -6.47 | -6.92 | -7.92 | -6.97 |
| 3300 | -5.91 | -8.98 | -6.55 | -8.96 | -7.61 | -8.05 |
| 3500 | -5.93 | -7.20 | -6.64 | -7.72 | -8.16 | -9.74 |
| 3800 | -7.43 | -7.77 | -7.22 | -8.83 | -9.24 | -10.72 |
| 5150 | -7.00 | -8.00 | -6.65 | -8.31 | -9.76 | -9.59 |
| 5250 | -6.36 | -8.26 | -6.97 | -7.74 | -8.24 | -8.70 |
| 5350 | -6.97 | -8.41 | -6.80 | -7.14 | -8.63 | -8.80 |
| 5475 | -6.99 | -8.08 | -6.43 | -7.54 | -9.12 | -9.98 |
| 5600 | -7.03 | -7.68 | -6.78 | -8.01 | -9.58 | -9.38 |
| 5725 | -7.12 | -7.46 | -6.89 | -7.74 | -10.05 | -7.86 |
| 5750 | -7.45 | -7.90 | -7.10 | -7.92 | -10.01 | -8.06 |
| 5800 | -7.48 | -7.98 | -6.72 | -7.21 | -9.63 | -8.66 |
| 5875 | -7.21 | -7.47 | -7.27 | -7.42 | -9.35 | -8.99 |

Section 2. Dimensioned Photos or Drawings of Antennas

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

Tx1 Antenna Dimensioned Drawing:

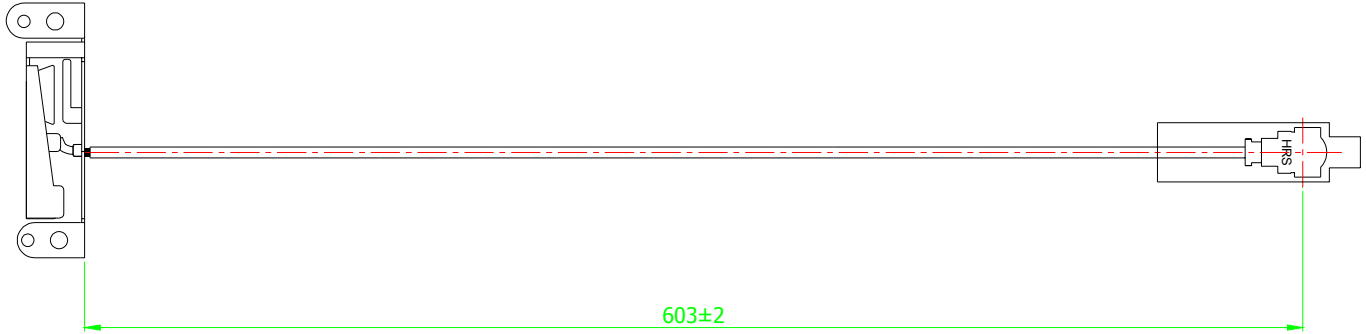


Tx1 Antenna Photo:



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

Tx2 Antenna Dimensioned Drawing:

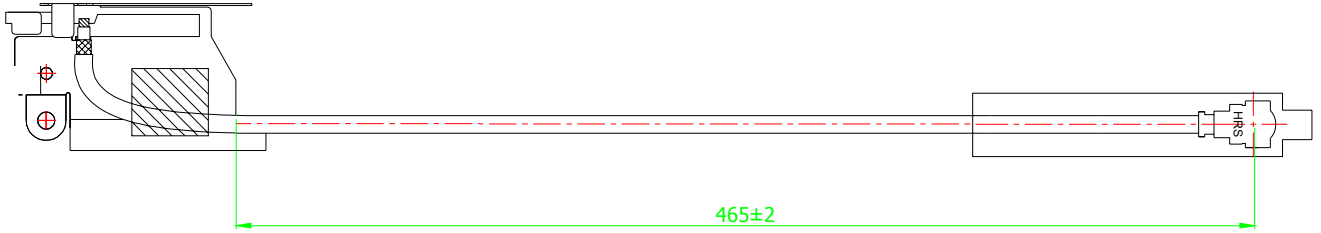


Tx2 Antenna Photo:

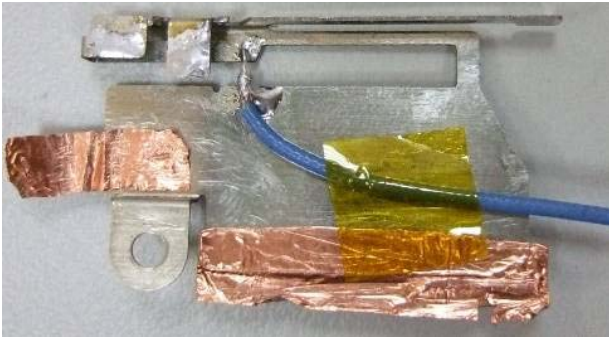


Include a dimensioned photo and dimensioned drawing of Tx3 (or Rx3) antenna here.

Tx3 (or Rx3) Antenna Dimensioned Drawing:



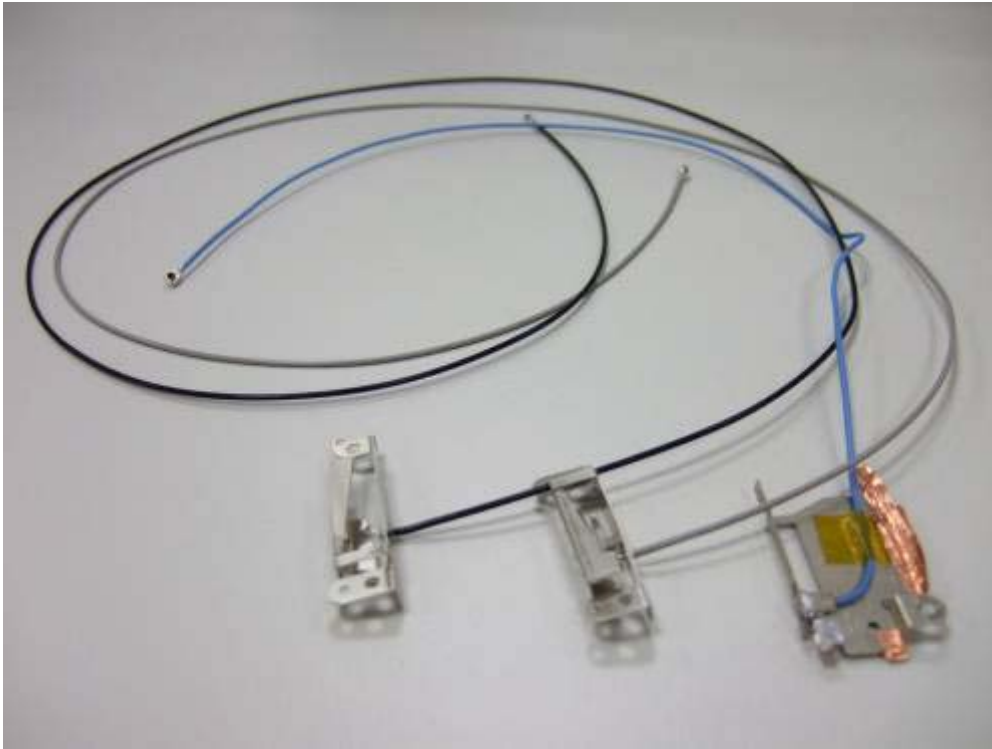
Tx3 (or Rx3) Antenna Photo:



Include front view photo of all 3 antennas here.

Antenna Manufacturer: **Wha Yu**

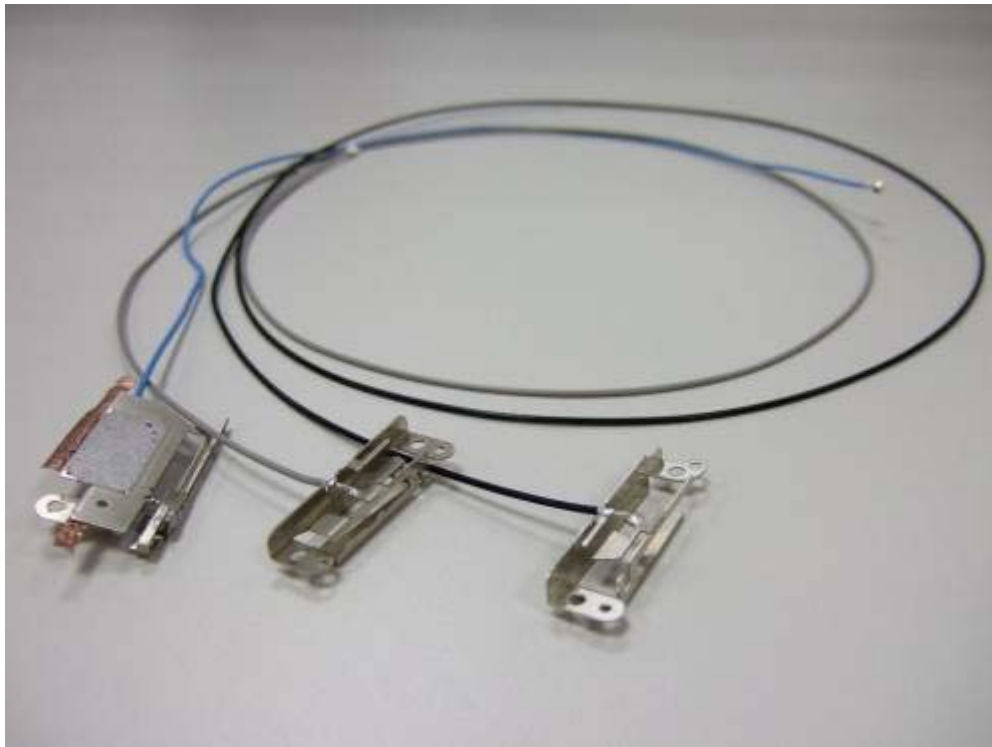
Antenna Part Number: **DQ652013200 (Tx1), DQ652013100 (Tx2), DQ652013300 (Tx3 or Rx3)**



Include back view photo of all 3 antennas here.

Antenna Manufacturer: **Wha Yu**

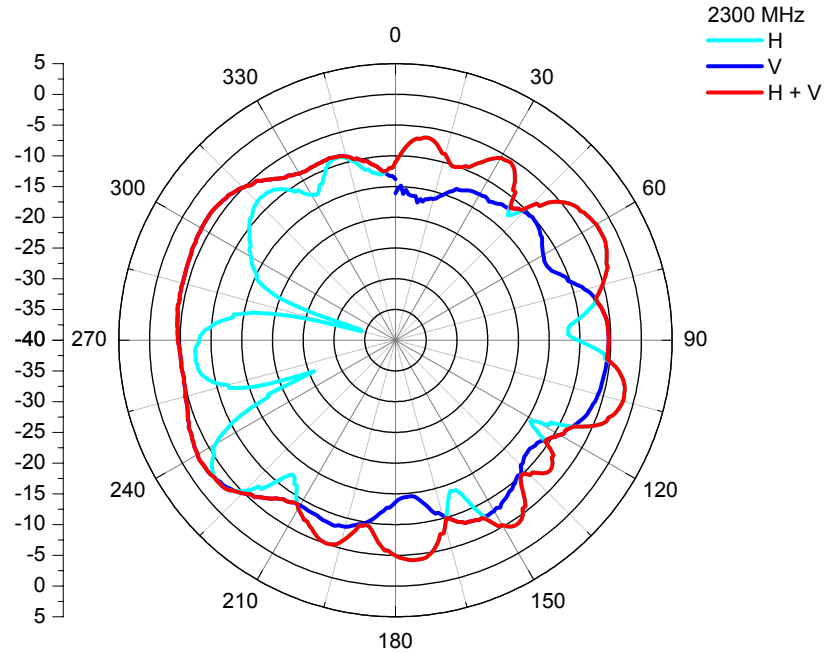
Antenna Part Number: **DQ652013200 (Tx1), DQ652013100 (Tx2), DQ652013300 (Tx3 or Rx3)**



Section 3. Radiation characteristics of antennae Loaded in Host Platform

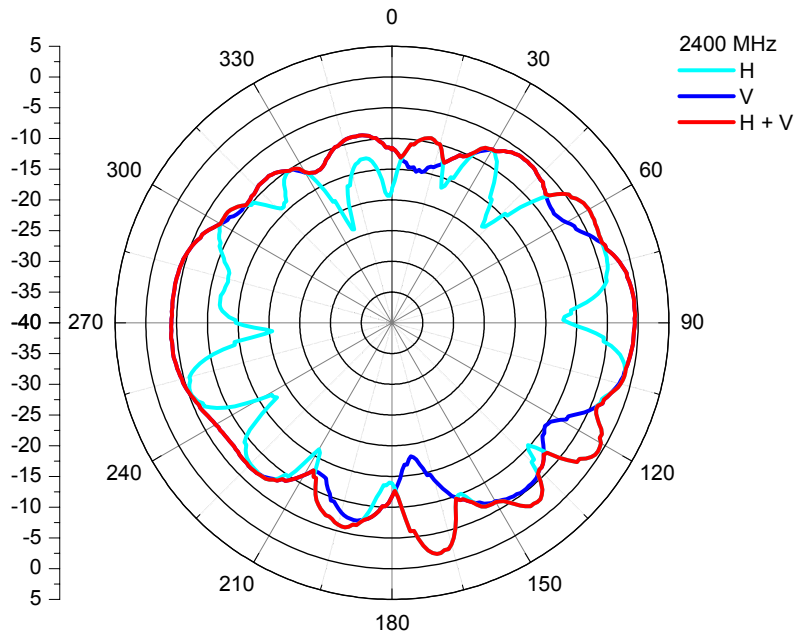
2300-2450MHz radiation characteristic

Tx1 antenna: 2300 MHz



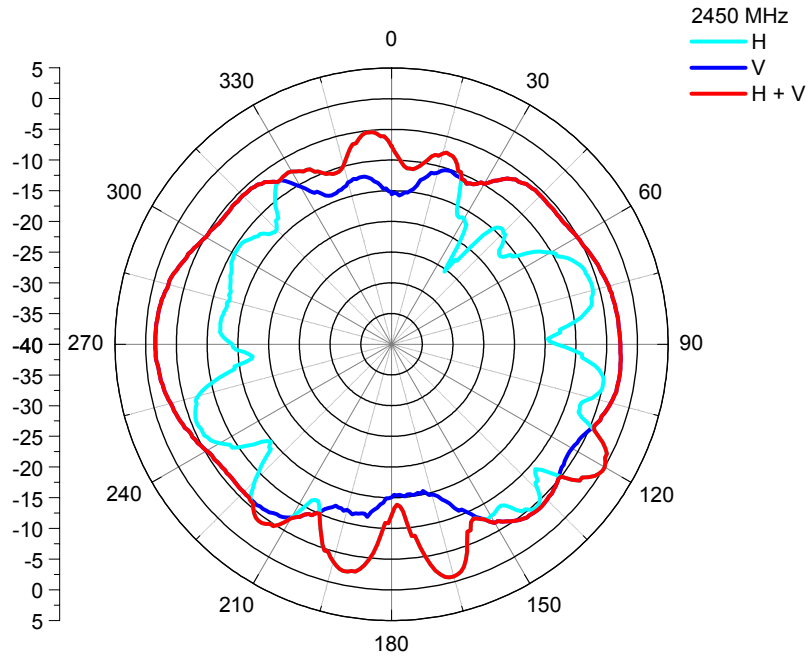
| | | | |
|-----------------------|-----------------|--------------------------|-----------------|
| Center Frequency | 2300 MHz | Center Frequency | 2300 MHz |
| Horizontal (dBi) peak | -1.57 | Horizontal (dBi) average | -6.95 |
| Vertical (dBi) peak | -2.59 | Vertical (dBi) average | -7.03 |
| Horz+Vert (dBi) peak | -1.57 | Horz+Vert (dBi) average | -3.97 |

Tx1 antenna: 2400 MHz



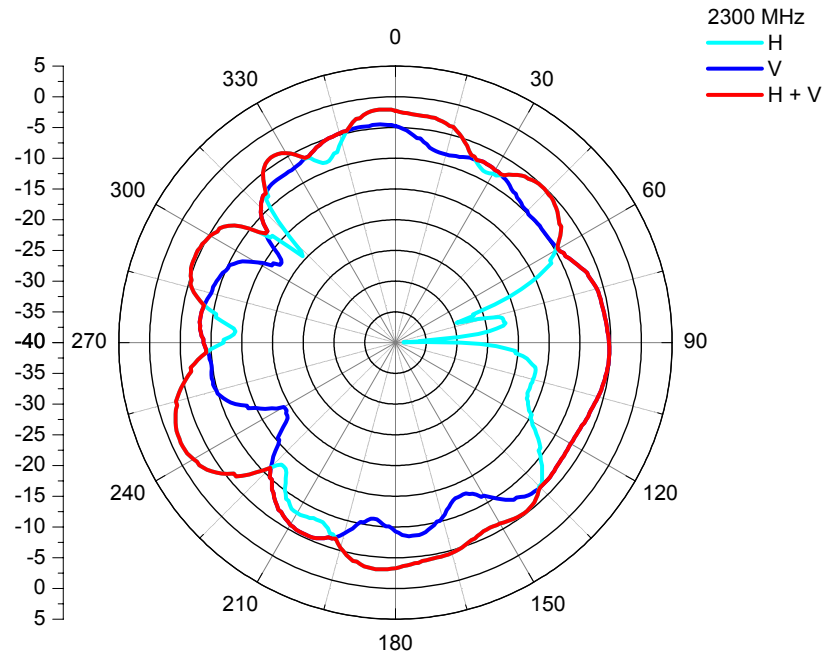
| | | | |
|-----------------------|-----------------|--------------------------|-----------------|
| Center Frequency | 2400 MHz | Center Frequency | 2400 MHz |
| Horizontal (dBi) peak | -0.43 | Horizontal (dBi) average | -6.84 |
| Vertical (dBi) peak | -0.38 | Vertical (dBi) average | -6.04 |
| Horz+Vert (dBi) peak | -0.38 | Horz+Vert (dBi) average | -3.41 |

Tx1 antenna: 2450 MHz



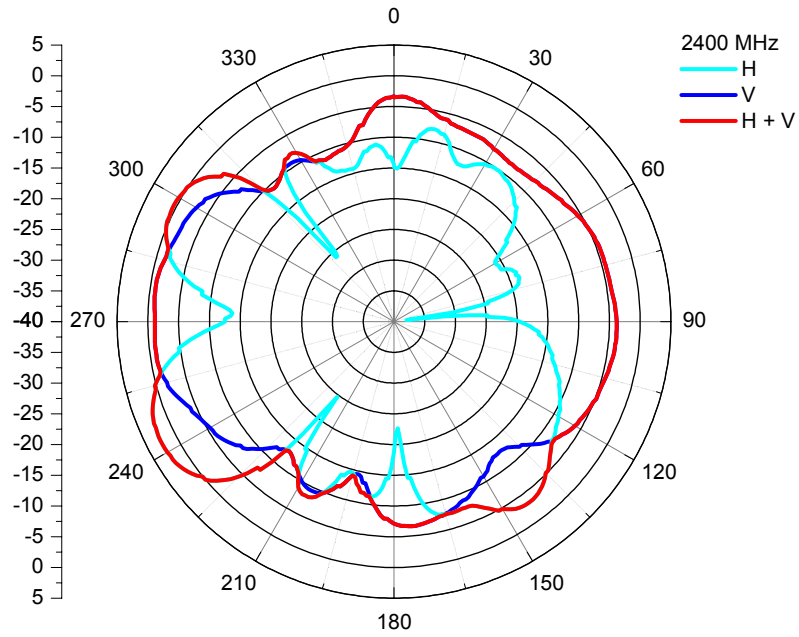
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2450 MHz | Center Frequency | 2450MHz |
| Horizontal (dBi) peak | 0.16 | Horizontal (dBi) average | -7.11 |
| Vertical (dBi) peak | -1.42 | Vertical (dBi) average | -5.54 |
| Horz+Vert (dBi) peak | 0.16 | Horz+Vert (dBi) average | -3.24 |

Tx2 antenna: 2300 MHz



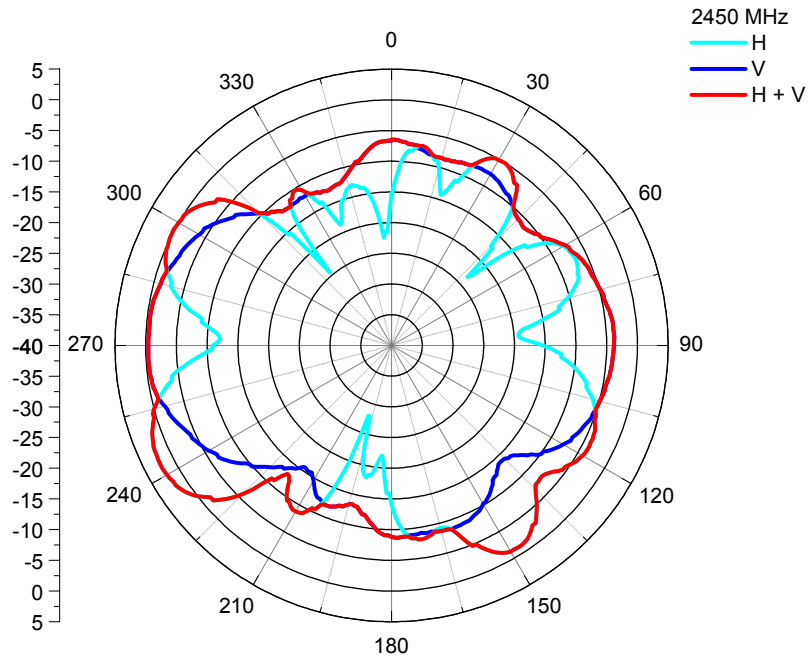
| | | | |
|-----------------------|-----------------|--------------------------|-----------------|
| Center Frequency | 2300 MHz | Center Frequency | 2300 MHz |
| Horizontal (dBi) peak | -1.23 | Horizontal (dBi) average | -5.90 |
| Vertical (dBi) peak | -4.30 | Vertical (dBi) average | -7.75 |
| Horz+Vert (dBi) peak | -1.23 | Horz+Vert (dBi) average | -3.72 |

Tx2 antenna: 2400 MHz



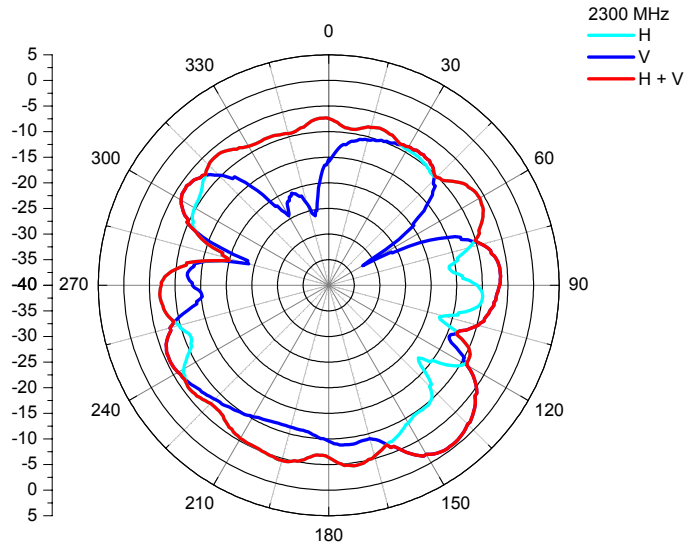
| | | | |
|-----------------------|-----------------|--------------------------|-----------------|
| Center Frequency | 2400 MHz | Center Frequency | 2400 MHz |
| Horizontal (dBi) peak | 2.16 | Horizontal (dBi) average | -6.00 |
| Vertical (dBi) peak | -1.07 | Vertical (dBi) average | -5.73 |
| Horz+Vert (dBi) peak | 2.16 | Horz+Vert (dBi) average | -2.85 |

Tx2 antenna: 2450 MHz



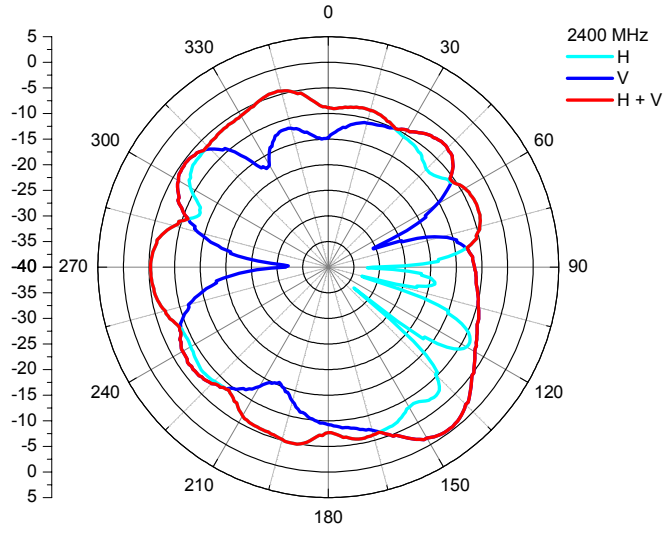
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2450 MHz | Center Frequency | 2450MHz |
| Horizontal (dBi) peak | 2.42 | Horizontal (dBi) average | -5.06 |
| Vertical (dBi) peak | -0.72 | Vertical (dBi) average | -6.44 |
| Horz+Vert (dBi) peak | 2.42 | Horz+Vert (dBi) average | -2.69 |

Tx3 (or Rx3) antenna: 2300 MHz (Plot is not required if 3rd Antenna is receive only e.g. Rx3 for 4965AGN)



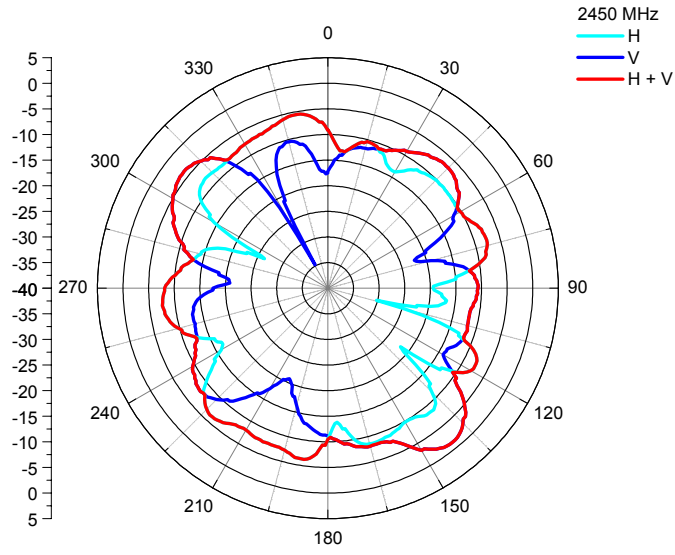
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2300 MHz | Center Frequency | 2300MHz |
| Horizontal (dBi) peak | -4.41 | Horizontal (dBi) average | -8.17 |
| Vertical (dBi) peak | -0.57 | Vertical (dBi) average | -8.21 |
| Horz+Vert (dBi) peak | -0.57 | Horz+Vert (dBi) average | -5.18 |

-Tx3 (or Rx3) antenna: 2400 MHz (Plot is not required if 3rd Antenna is receive only e.g. Rx3 for 4965AGN)



| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2400 MHz | Center Frequency | 2400MHz |
| Horizontal (dBi) peak | -4.25 | Horizontal (dBi) average | -7.95 |
| Vertical (dBi) peak | -0.50 | Vertical (dBi) average | -8.22 |
| Horz+Vert (dBi) peak | -0.50 | Horz+Vert (dBi) average | -5.07 |

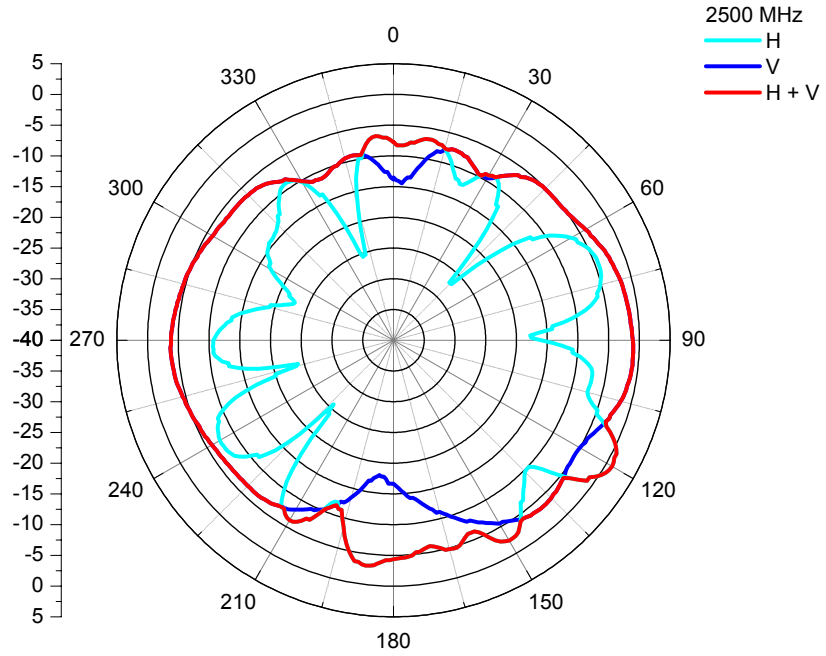
Tx3 (or Rx3) antenna: 2450 MHz (Plot is not required if 3rd Antenna is receive only e.g. Rx3 for 4965AGN)



| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2450 MHz | Center Frequency | 2450MHz |
| Horizontal (dBi) peak | -5.56 | Horizontal (dBi) average | -9.44 |
| Vertical (dBi) peak | -1.31 | Vertical (dBi) average | -8.96 |
| Horz+Vert (dBi) peak | -1.31 | Horz+Vert (dBi) average | -6.18 |

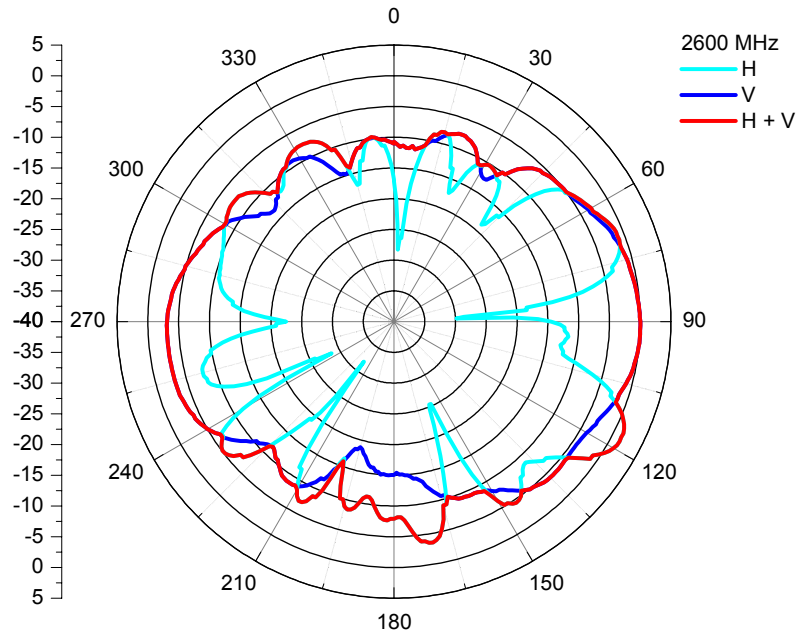
2500-2700MHz radiation characteristic

Tx1 antenna: 2500 MHz



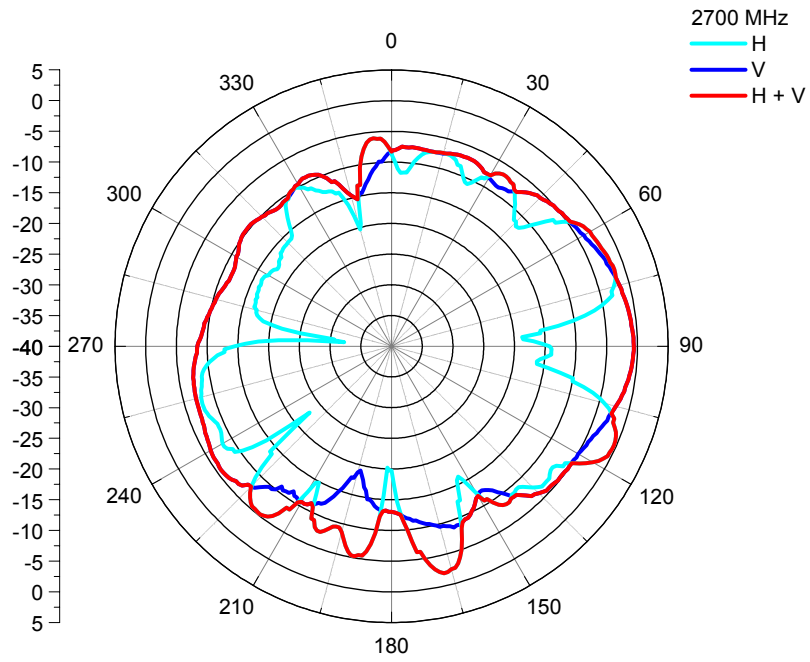
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2500 MHz | Center Frequency | 2500MHz |
| Horizontal (dBi) peak | 0.86 | Horizontal (dBi) average | -7.49 |
| Vertical (dBi) peak | -1.02 | Vertical (dBi) average | -5.63 |
| Horz+Vert (dBi) peak | 0.86 | Horz+Vert (dBi) average | -3.45 |

Tx1 antenna: 2600 MHz



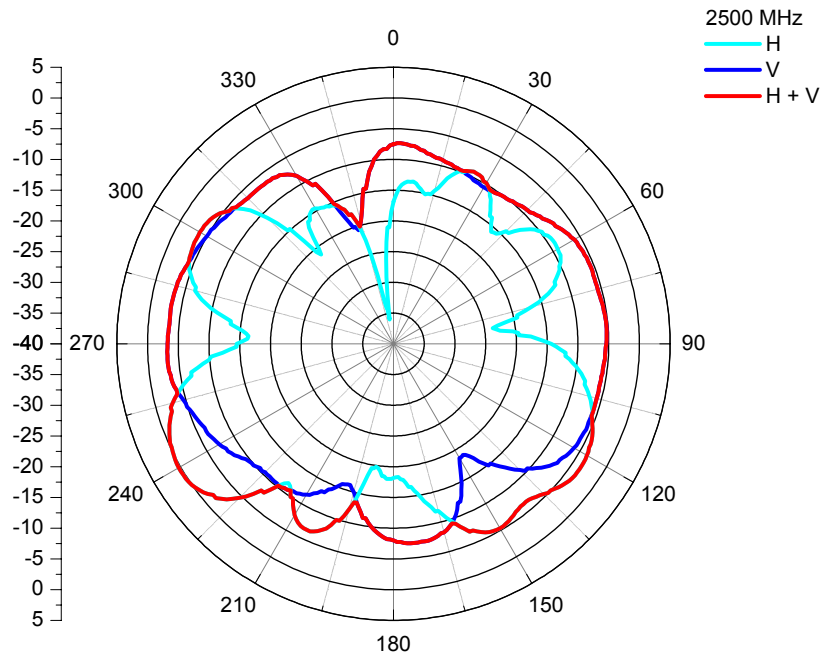
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2600 MHz | Center Frequency | 2600MHz |
| Horizontal (dBi) peak | 1.41 | Horizontal (dBi) average | -7.22 |
| Vertical (dBi) peak | -0.15 | Vertical (dBi) average | -5.65 |
| Horz+Vert (dBi) peak | 1.41 | Horz+Vert (dBi) average | -3.35 |

Tx1 antenna: 2700 MHz



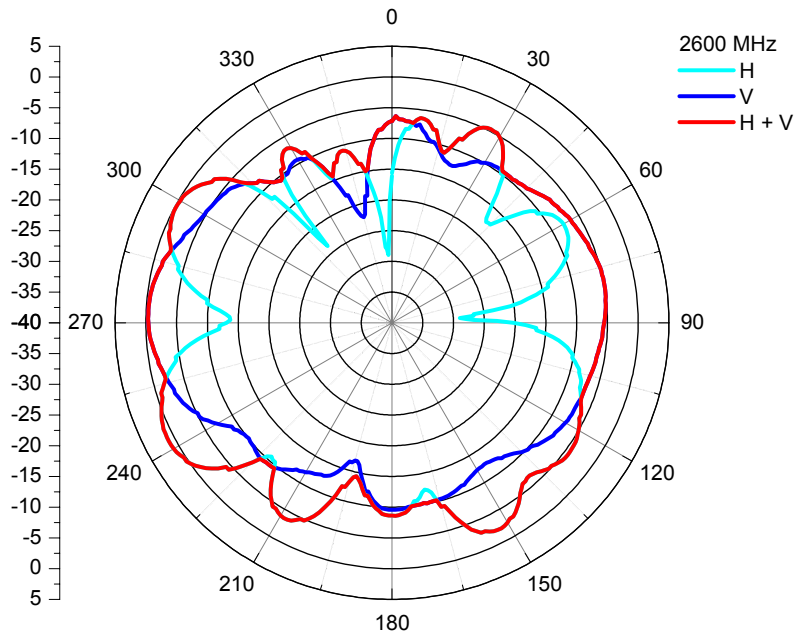
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2700 MHz | Center Frequency | 2700MHz |
| Horizontal (dBi) peak | -0.26 | Horizontal (dBi) average | -7.33 |
| Vertical (dBi) peak | -0.45 | Vertical (dBi) average | -6.38 |
| Horz+Vert (dBi) peak | -0.26 | Horz+Vert (dBi) average | -3.82 |

Tx2 antenna: 2500 MHz



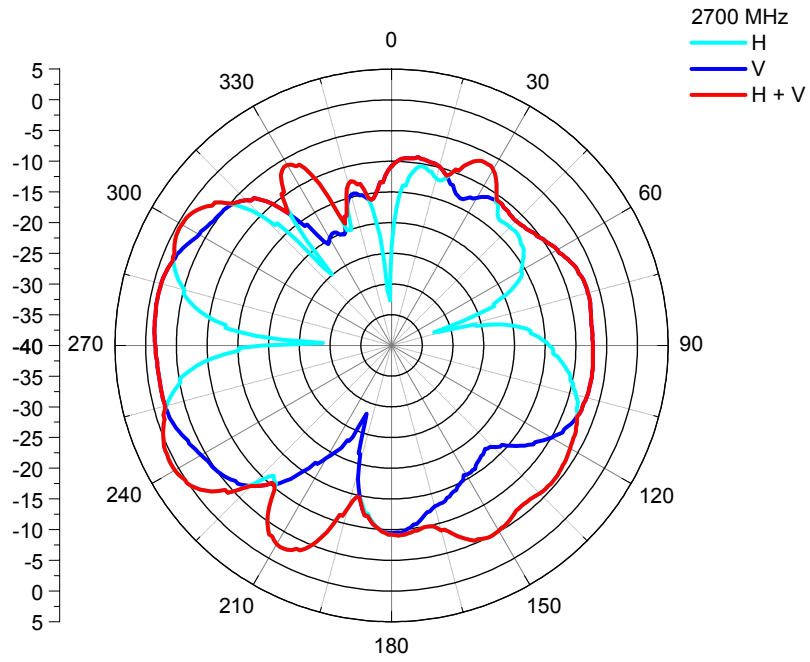
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2500 MHz | Center Frequency | 2500MHz |
| Horizontal (dBi) peak | 0.52 | Horizontal (dBi) average | -6.93 |
| Vertical (dBi) peak | -3.30 | Vertical (dBi) average | -7.33 |
| Horz+Vert (dBi) peak | 0.52 | Horz+Vert (dBi) average | -4.12 |

Tx2 antenna: 2600 MHz



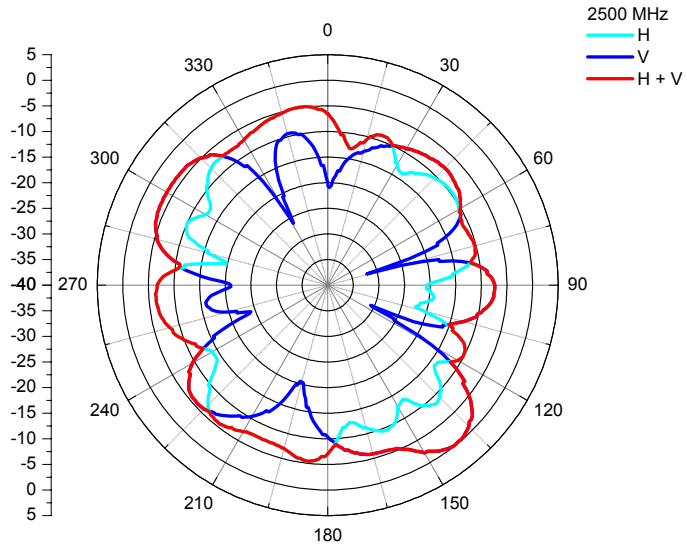
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2600 MHz | Center Frequency | 2600MHz |
| Horizontal (dBi) peak | 1.02 | Horizontal (dBi) average | -5.73 |
| Vertical (dBi) peak | -0.44 | Vertical (dBi) average | -6.71 |
| Horz+Vert (dBi) peak | 1.02 | Horz+Vert (dBi) average | -3.18 |

Tx2 antenna: 2700 MHz



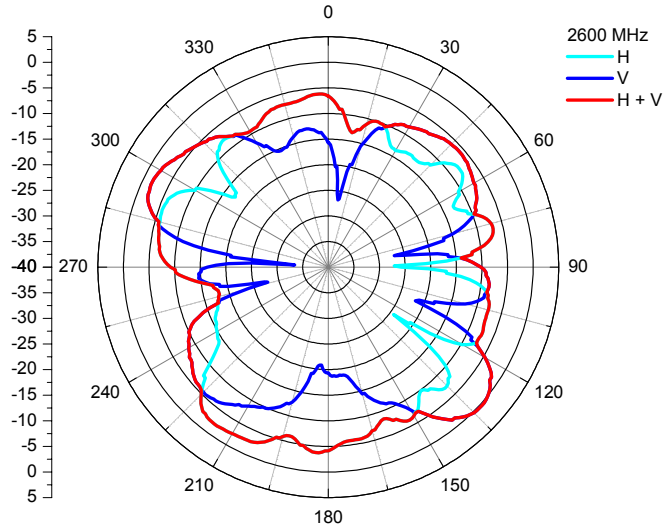
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2700 MHz | Center Frequency | 2700MHz |
| Horizontal (dBi) peak | 0.60 | Horizontal (dBi) average | -6.47 |
| Vertical (dBi) peak | -0.97 | Vertical (dBi) average | -6.92 |
| Horz+Vert (dBi) peak | 0.60 | Horz+Vert (dBi) average | -3.68 |

Tx3 (or Rx3) antenna: 2500 MHz (Plot is not required if 3rd Antenna is receive only e.g. Rx3 for 4965AGN)



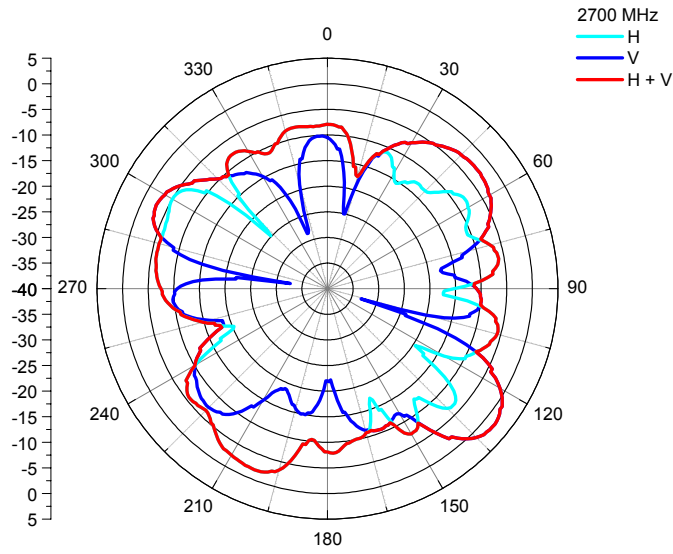
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2500 MHz | Center Frequency | 2500MHz |
| Horizontal (dBi) peak | -4.82 | Horizontal (dBi) average | -9.10 |
| Vertical (dBi) peak | -0.13 | Vertical (dBi) average | -7.72 |
| Horz+Vert (dBi) peak | -0.13 | Horz+Vert (dBi) average | -5.34 |

Tx3 (or Rx3) antenna: 2600MHz (Plot is not required if 3rd Antenna is receive only e.g. Rx3 for 4965AGN)



| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2600 MHz | Center Frequency | 2600MHz |
| Horizontal (dBi) peak | -2.13 | Horizontal (dBi) average | -7.74 |
| Vertical (dBi) peak | 0.37 | Vertical (dBi) average | -7.43 |
| Horz+Vert (dBi) peak | 0.37 | Horz+Vert (dBi) average | -4.57 |

Tx3 (or Rx3) antenna: 2700 MHz (Plot is not required if 3rd Antenna is receive only e.g. Rx3 for 4965AGN)

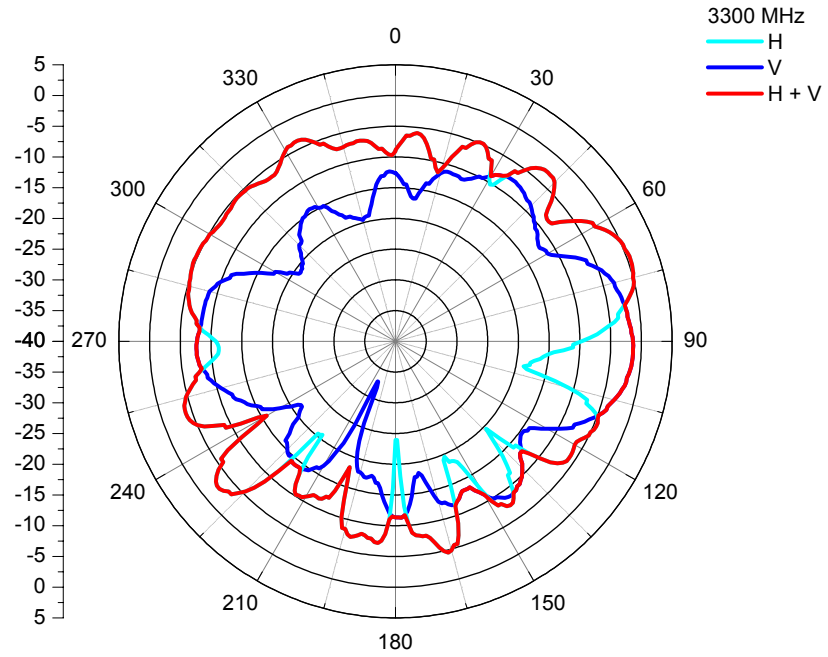


c

| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 2700 MHz | Center Frequency | 2700MHz |
| Horizontal (dBi) peak | -1.88 | Horizontal (dBi) average | -7.92 |
| Vertical (dBi) peak | 2.04 | Vertical (dBi) average | -6.97 |
| Horz+Vert (dBi) peak | 2.04 | Horz+Vert (dBi) average | -4.41 |

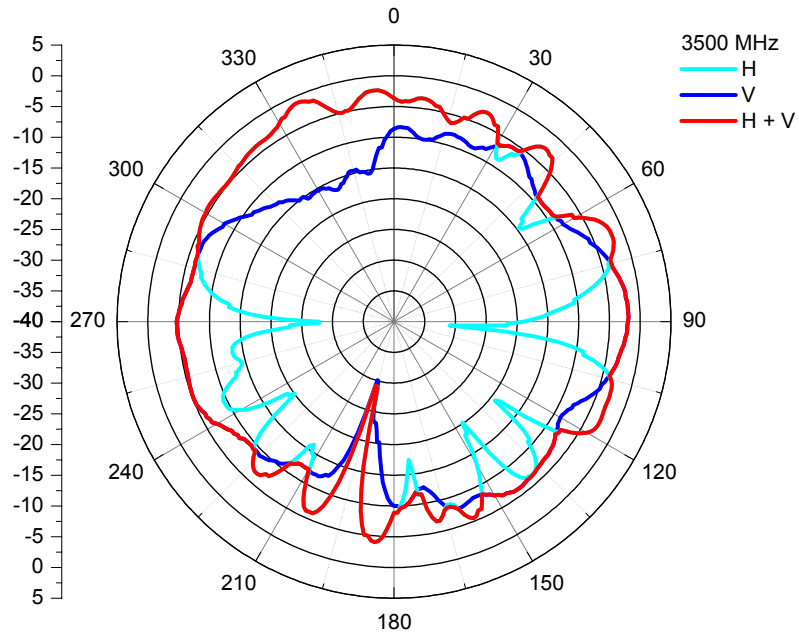
3300-3800MHz radiation characteristic

Tx1 antenna: 3300 MHz



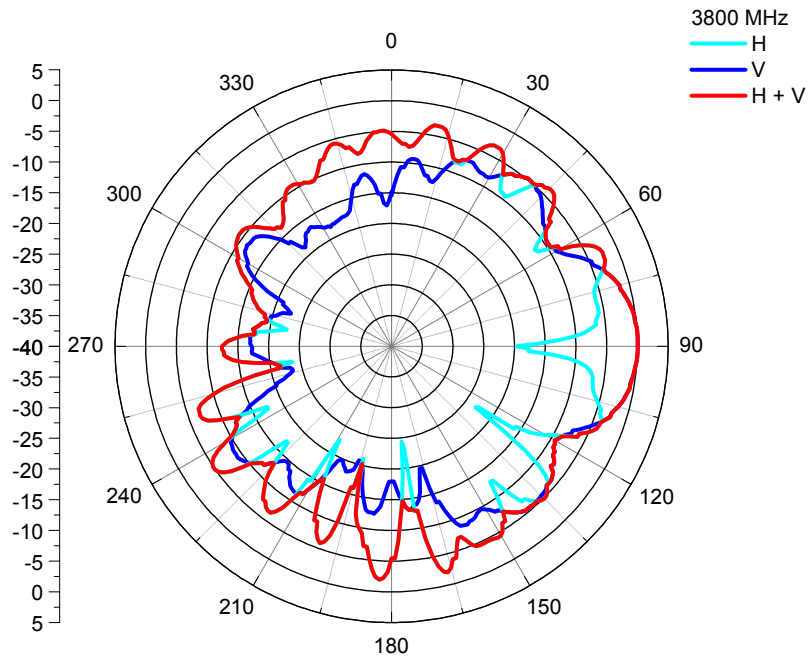
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 3300 MHz | Center Frequency | 3300MHz |
| Horizontal (dBi) peak | 0.64 | Horizontal (dBi) average | -5.91 |
| Vertical (dBi) peak | -1.25 | Vertical (dBi) average | -8.98 |
| Horz+Vert (dBi) peak | 0.64 | Horz+Vert (dBi) average | -4.17 |

Tx1 antenna: 3500 MHz



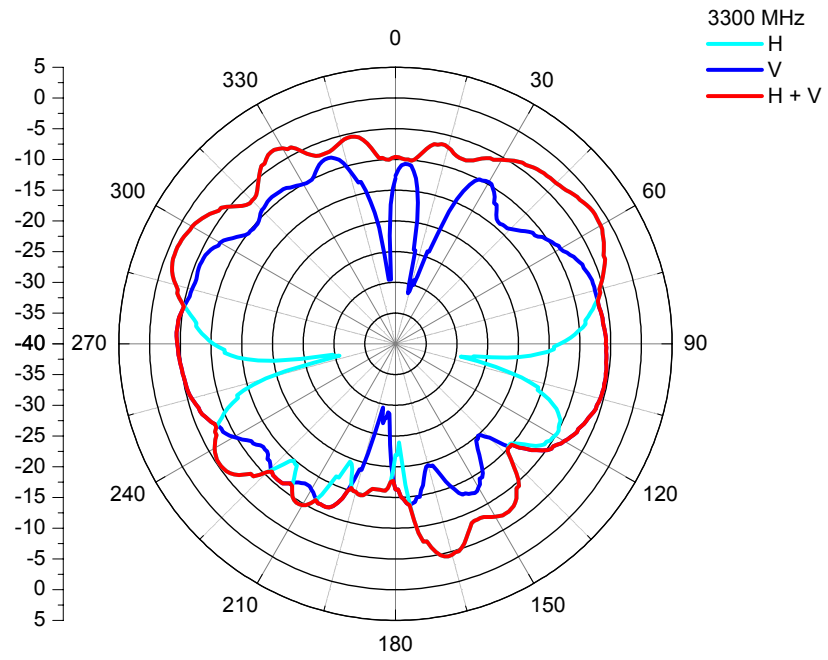
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 3500 MHz | Center Frequency | 3500MHz |
| Horizontal (dBi) peak | -0.93 | Horizontal (dBi) average | -5.93 |
| Vertical (dBi) peak | -1.78 | Vertical (dBi) average | -7.20 |
| Horz+Vert (dBi) peak | -0.93 | Horz+Vert (dBi) average | -3.51 |

Tx1 antenna: 3800 MHz



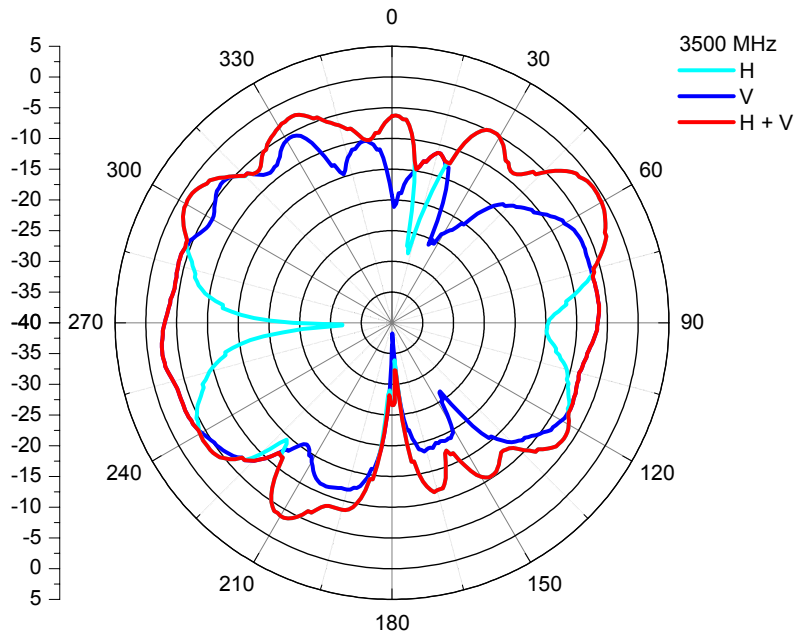
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 3800 MHz | Center Frequency | 3800MHz |
| Horizontal (dBi) peak | -2.06 | Horizontal (dBi) average | -7.43 |
| Vertical (dBi) peak | -0.03 | Vertical (dBi) average | -7.77 |
| Horz+Vert (dBi) peak | -0.03 | Horz+Vert (dBi) average | -4.58 |

Tx2 antenna: 3300 MHz



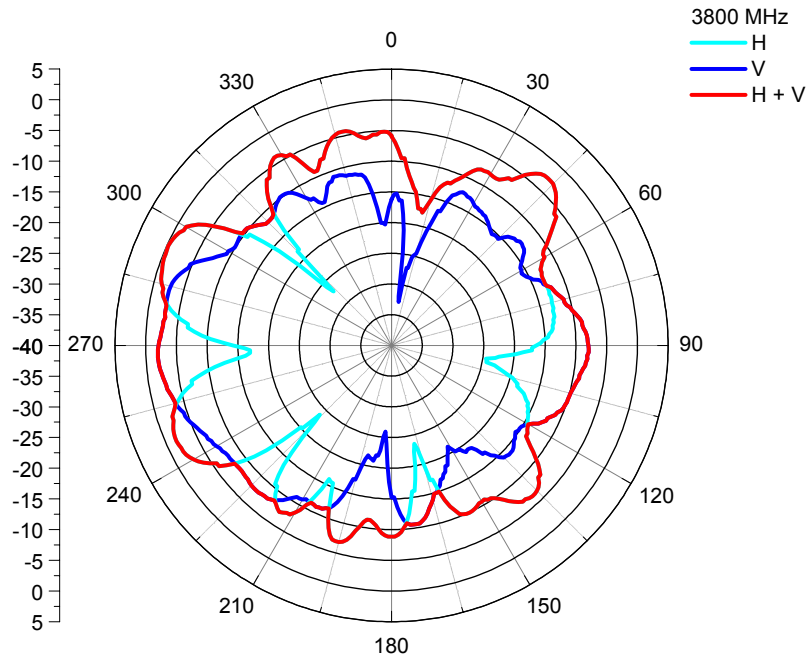
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 3300 MHz | Center Frequency | 3300MHz |
| Horizontal (dBi) peak | -1.23 | Horizontal (dBi) average | -6.55 |
| Vertical (dBi) peak | -4.28 | Vertical (dBi) average | -8.96 |
| Horz+Vert (dBi) peak | -1.23 | Horz+Vert (dBi) average | -4.58 |

Tx2 antenna: 3500 MHz



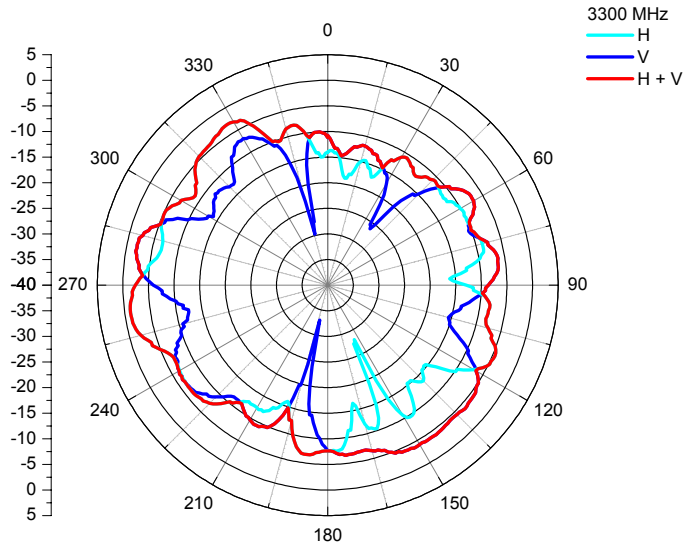
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 3500 MHz | Center Frequency | 3500MHz |
| Horizontal (dBi) peak | -0.71 | Horizontal (dBi) average | -6.64 |
| Vertical (dBi) peak | -2.17 | Vertical (dBi) average | -7.72 |
| Horz+Vert (dBi) peak | -0.71 | Horz+Vert (dBi) average | -4.13 |

Tx2 antenna:3800 MHz



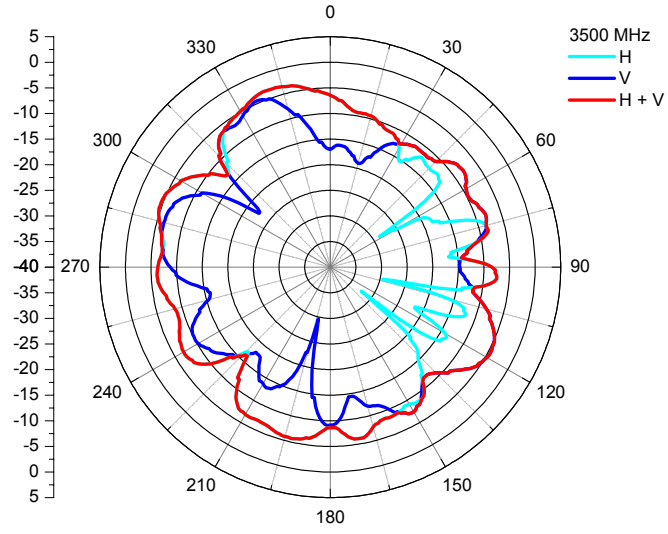
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 3800 MHz | Center Frequency | 3800MHz |
| Horizontal (dBi) peak | -0.35 | Horizontal (dBi) average | -7.22 |
| Vertical (dBi) peak | -1.75 | Vertical (dBi) average | -8.83 |
| Horz+Vert (dBi) peak | -0.35 | Horz+Vert (dBi) average | -4.94 |

Tx3 (or Rx3) antenna: 3300 MHz (Plot is not required if 3rd Antenna is receive only e.g. Rx3 for 4965AGN)



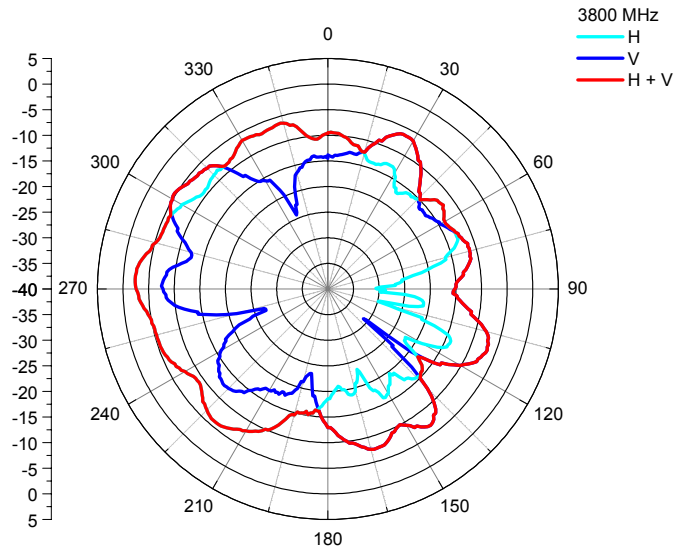
| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 3300 MHz | Center Frequency | 3300MHz |
| Horizontal (dBi) peak | -1.11 | Horizontal (dBi) average | -7.61 |
| Vertical (dBi) peak | -1.89 | Vertical (dBi) average | -8.05 |
| Horz+Vert (dBi) peak | -1.11 | Horz+Vert (dBi) average | -4.82 |

Tx3 (or Rx3) antenna: 3500MHz (Plot is not required if 3rd Antenna is receive only e.g. Rx3 for 4965AGN)



| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 3500 MHz | Center Frequency | 3500MHz |
| Horizontal (dBi) peak | -3.34 | Horizontal (dBi) average | -8.16 |
| Vertical (dBi) peak | -4.49 | Vertical (dBi) average | -9.74 |
| Horz+Vert (dBi) peak | -3.34 | Horz+Vert (dBi) average | -5.87 |

Tx3 (or Rx3) antenna: 3800 MHz (Plot is not required if 3rd Antenna is receive only e.g. Rx3 for 4965AGN)



| | | | |
|-----------------------|-----------------|--------------------------|----------------|
| Center Frequency | 3800 MHz | Center Frequency | 3800MHz |
| Horizontal (dBi) peak | -2.32 | Horizontal (dBi) average | -9.24 |
| Vertical (dBi) peak | -4.70 | Vertical (dBi) average | -10.72 |
| Horz+Vert (dBi) peak | -2.32 | Horz+Vert (dBi) average | -6.91 |