

Regulatory WLAN Antenna Information TIAN01

Intel Corporation

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 |

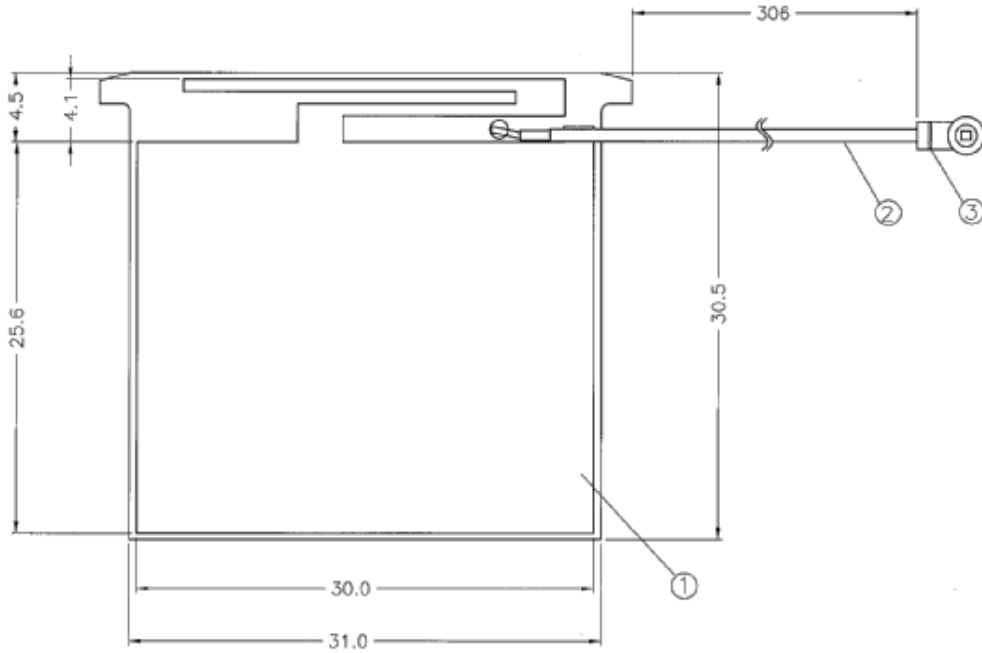
Section 1. Antenna Assembly

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

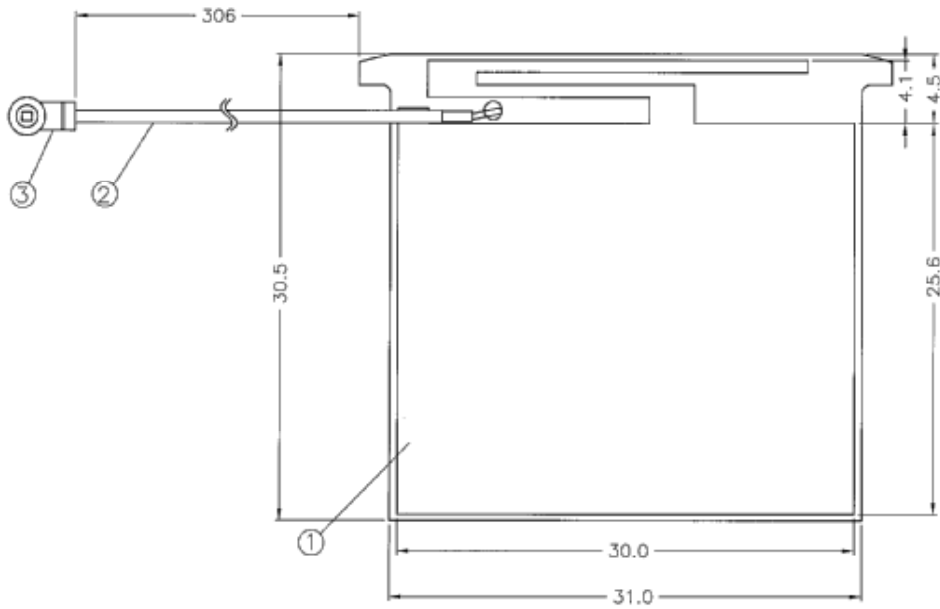
Include a dimensioned photo or dimensioned drawing of main antenna here.



| 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 |

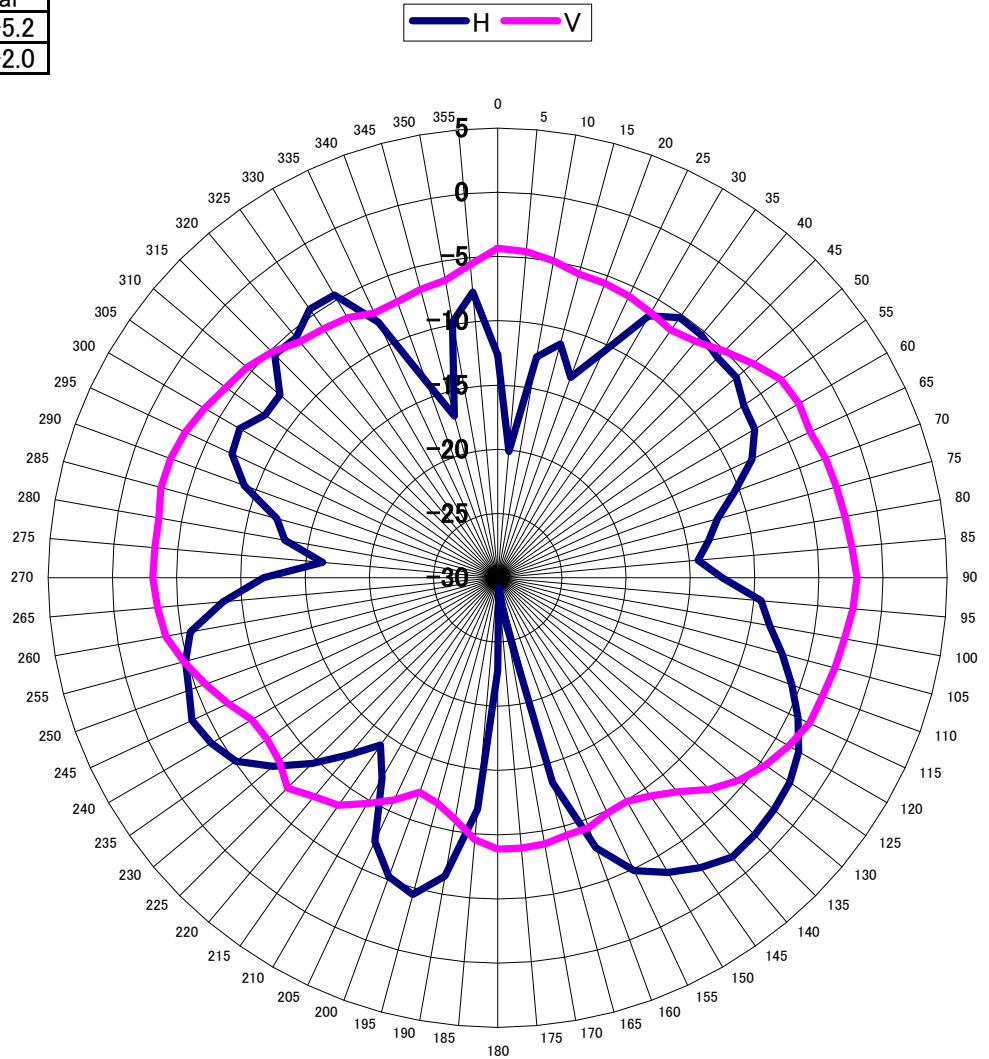
The drawing of an aux sub-assembly.
Unit: mm

Section 3. Radiation characteristics of antennae Loaded in Host Platform

2400-2500MHz radiation characteristic

Main antenna: 2400 MHz

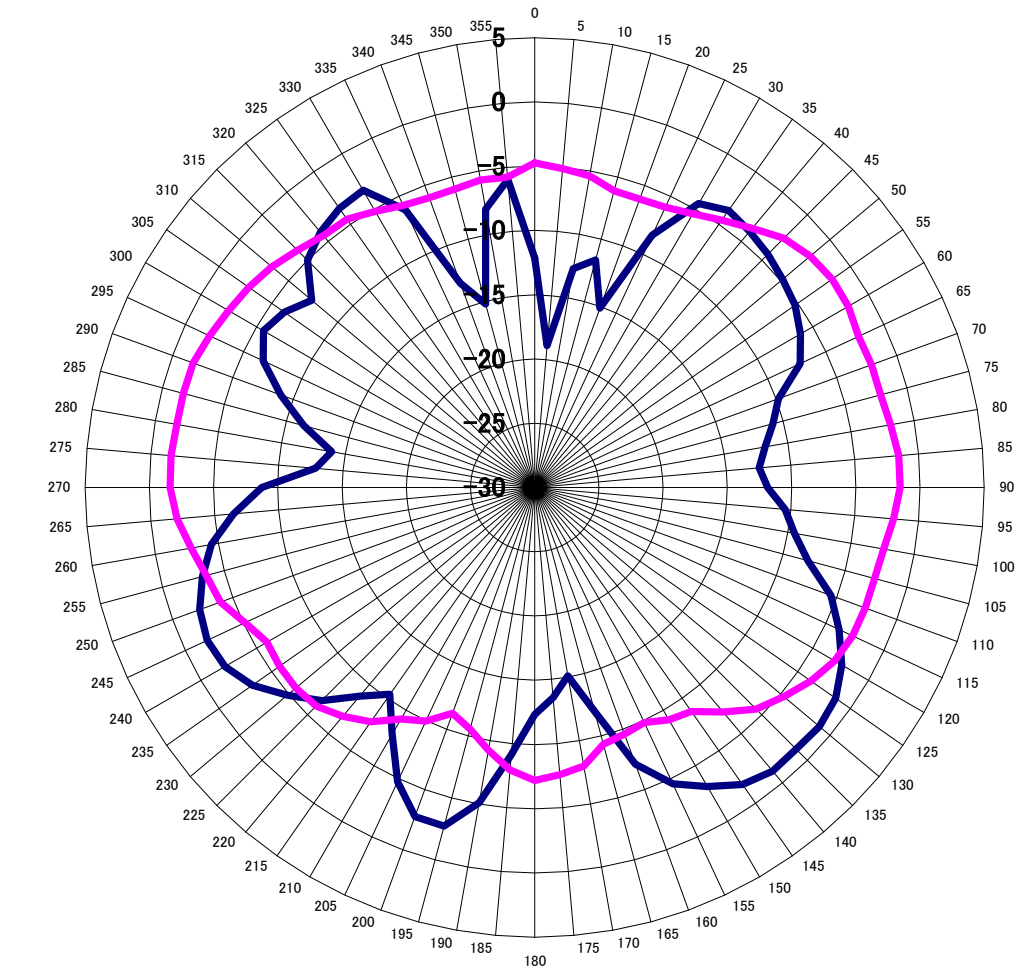
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -6.8 | -5.2 |
| MAX | -1.6 | -2.0 |



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

Main antenna: 2450 MHz

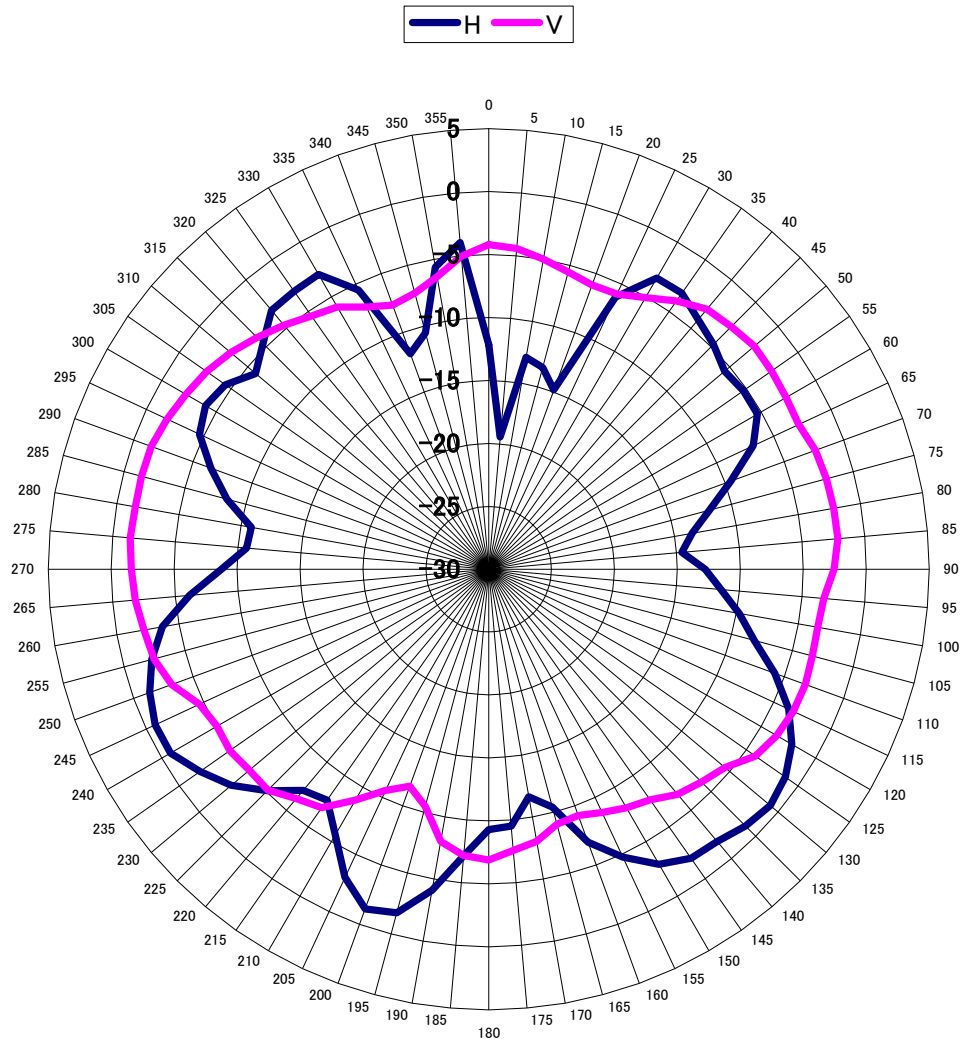
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -5.6 | -4.2 |
| MAX | -1.1 | -1.6 |



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

Main antenna: 2500 MHz

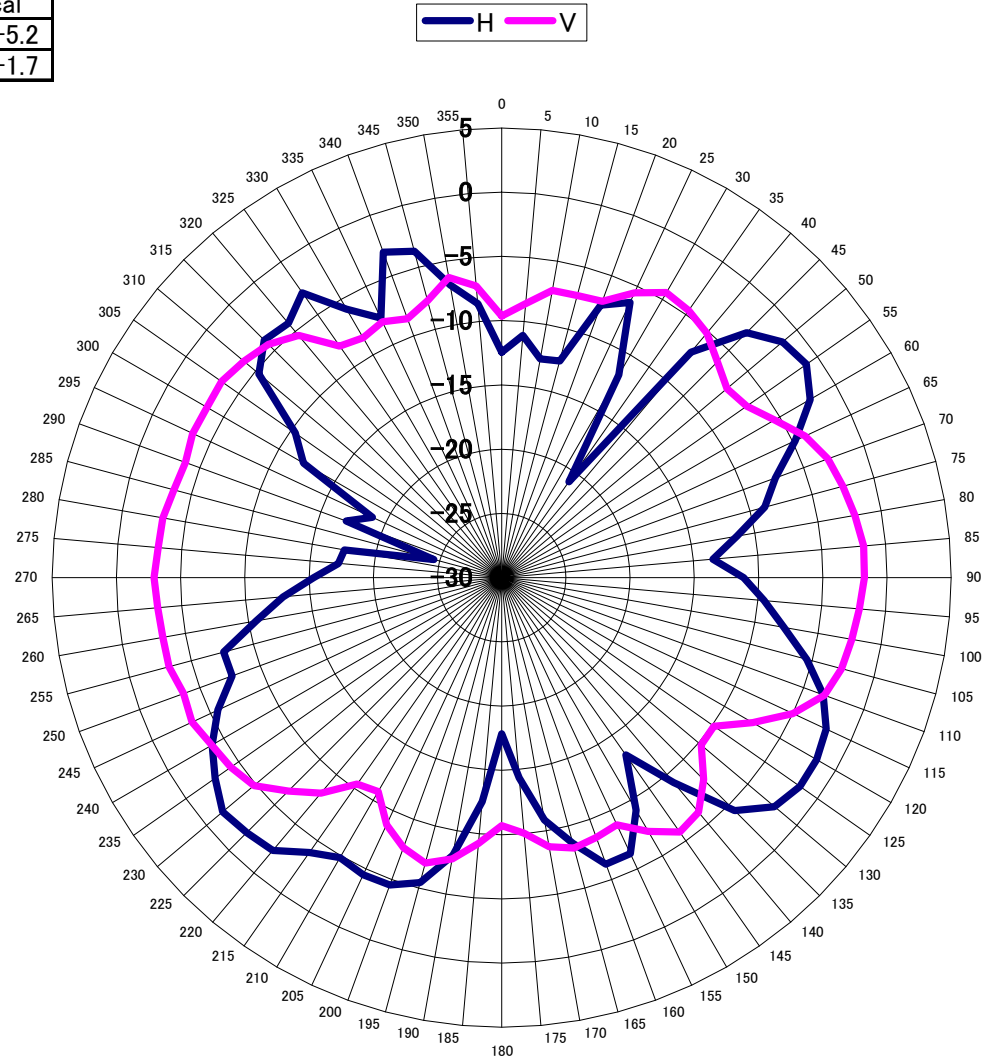
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -4.9 | -4.2 |
| MAX | -0.8 | -1.4 |



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

Auxiliary antenna: 2400 MHz

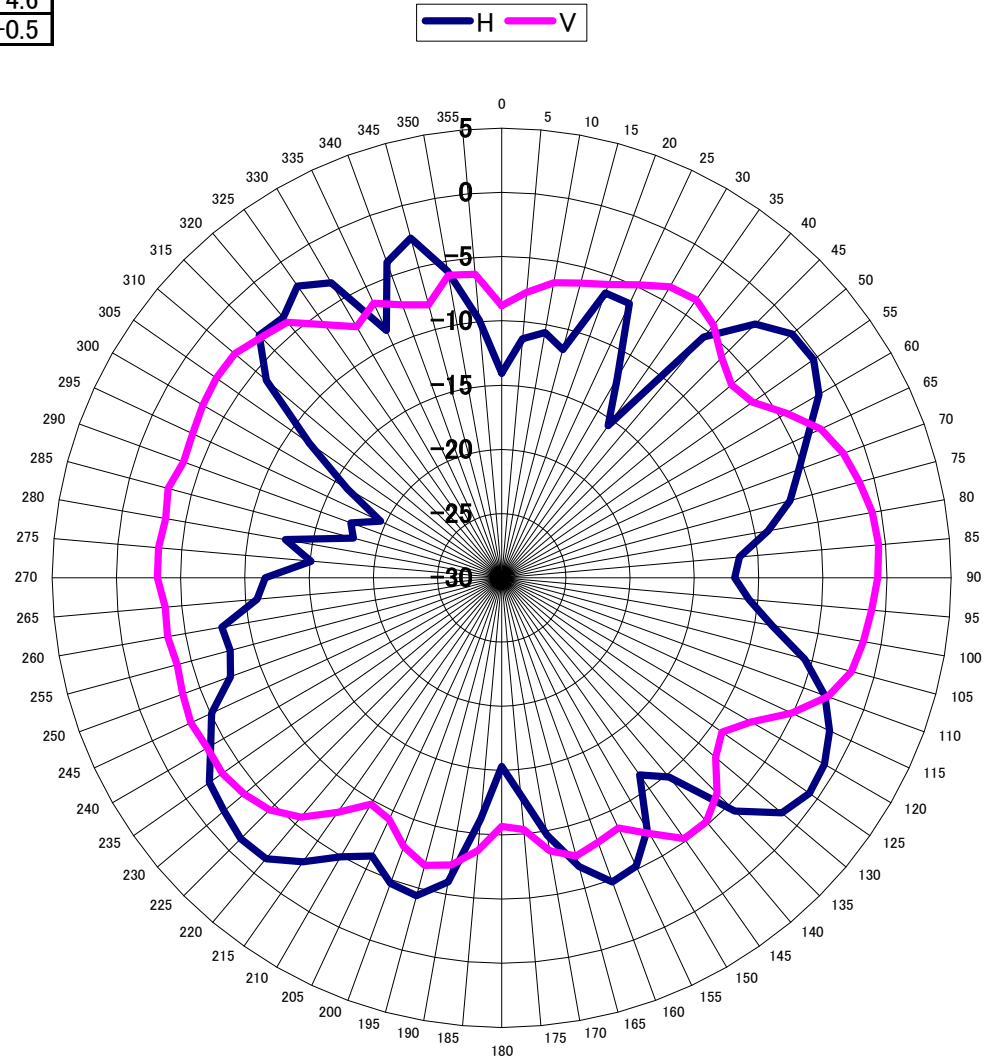
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -5.9 | -5.2 |
| MAX | -1.1 | -1.7 |



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

Auxiliary antenna: 2450 MHz

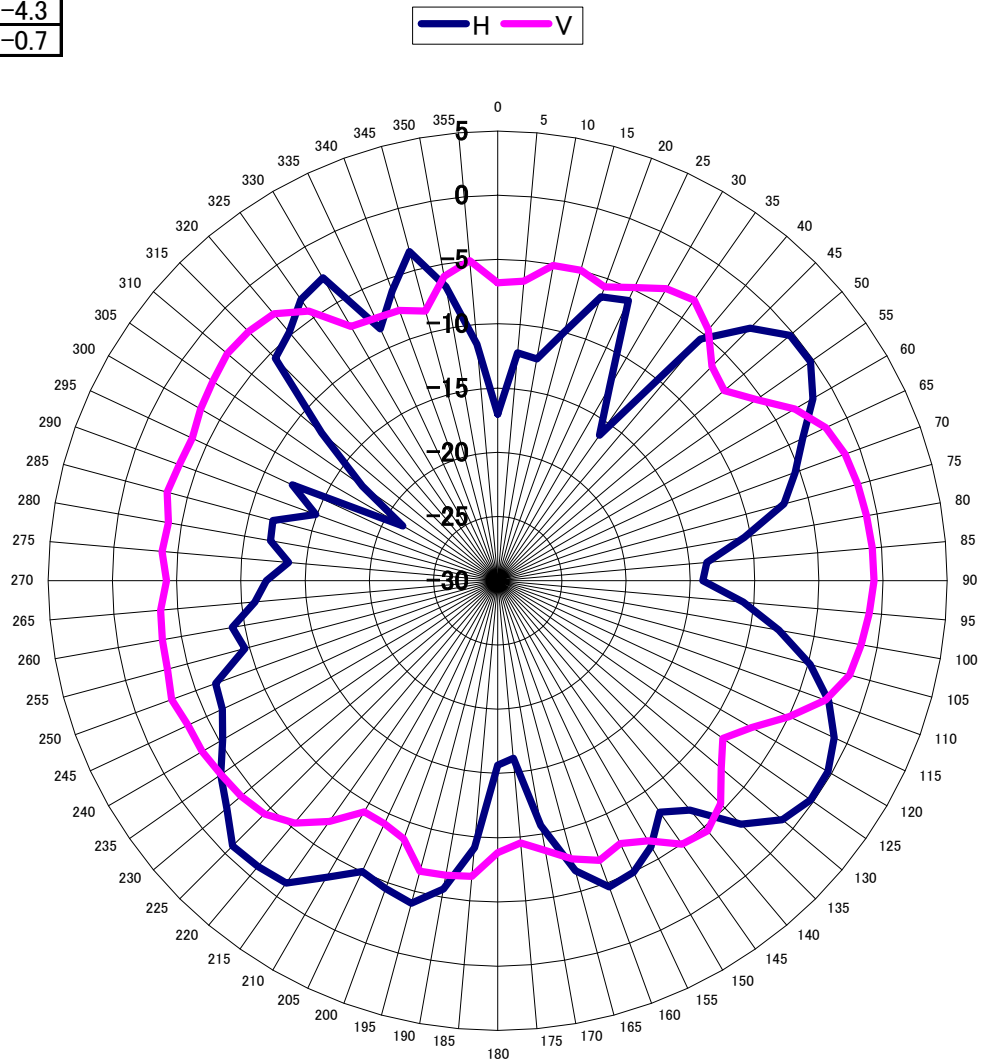
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -5.3 | -4.6 |
| MAX | -0.4 | -0.5 |



| | |
|-----------------------|----------|
| 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 |

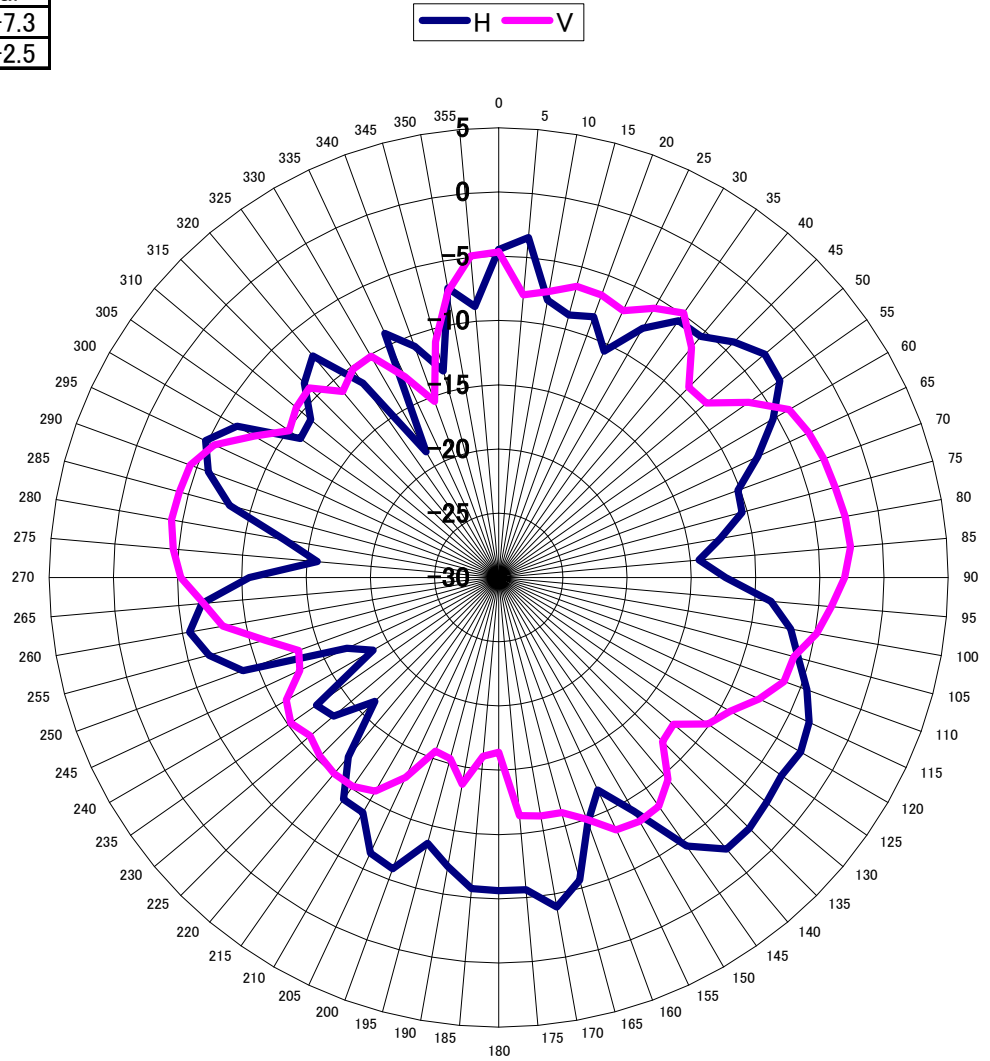


| | |
|-----------------------|----------|
| Center Frequency | 2500 MHz |
| Horizontal (dBi) peak | -0.3 |
| Vertical (dBi) peak | -0.7 |
| Horiz+Vert (dBi) peak | -0.3 |

5150-5350 MHz radiation characteristic

Main antenna: 5150 MHz

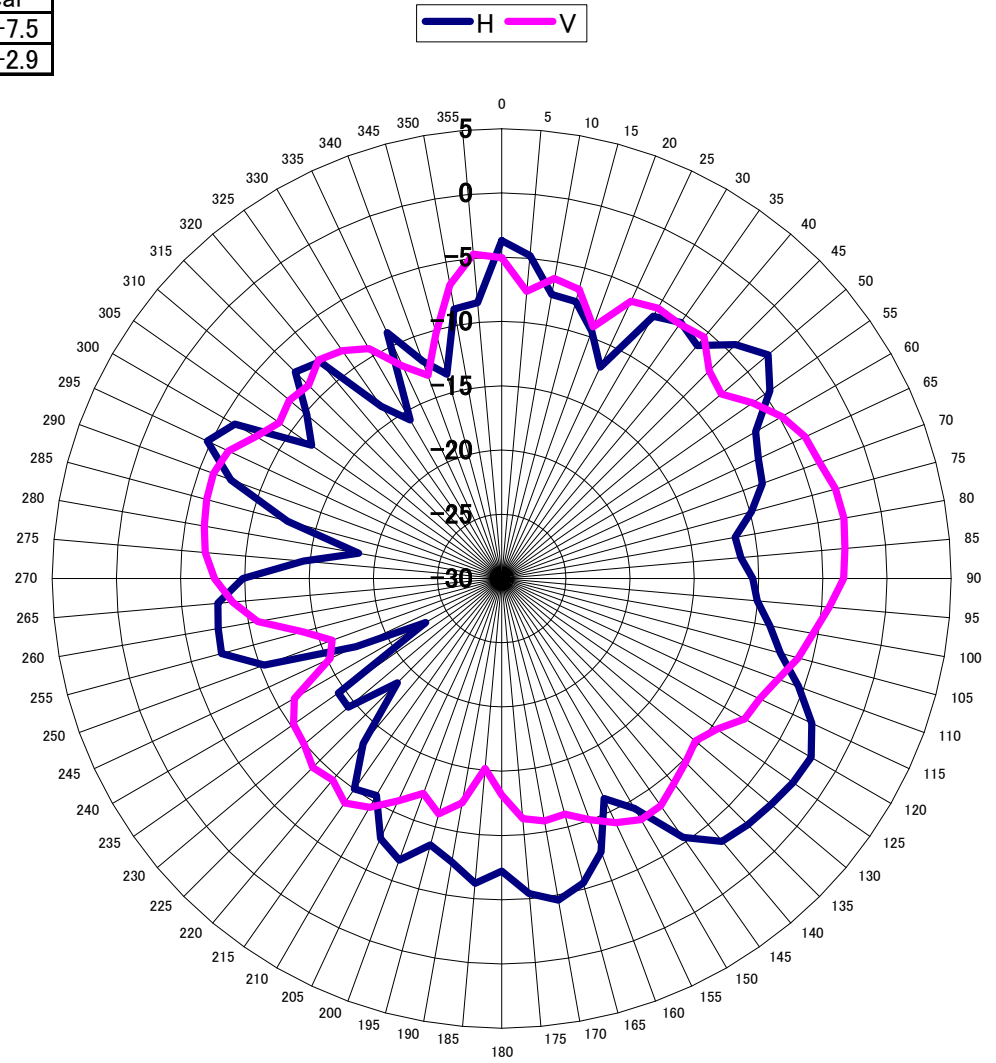
| | | |
|-----|------------|----------|
| | Horizontal | Vertical |
| AVG | -6.9 | -7.3 |
| MAX | -2.4 | -2.5 |



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

Main antenna: 5250 MHz

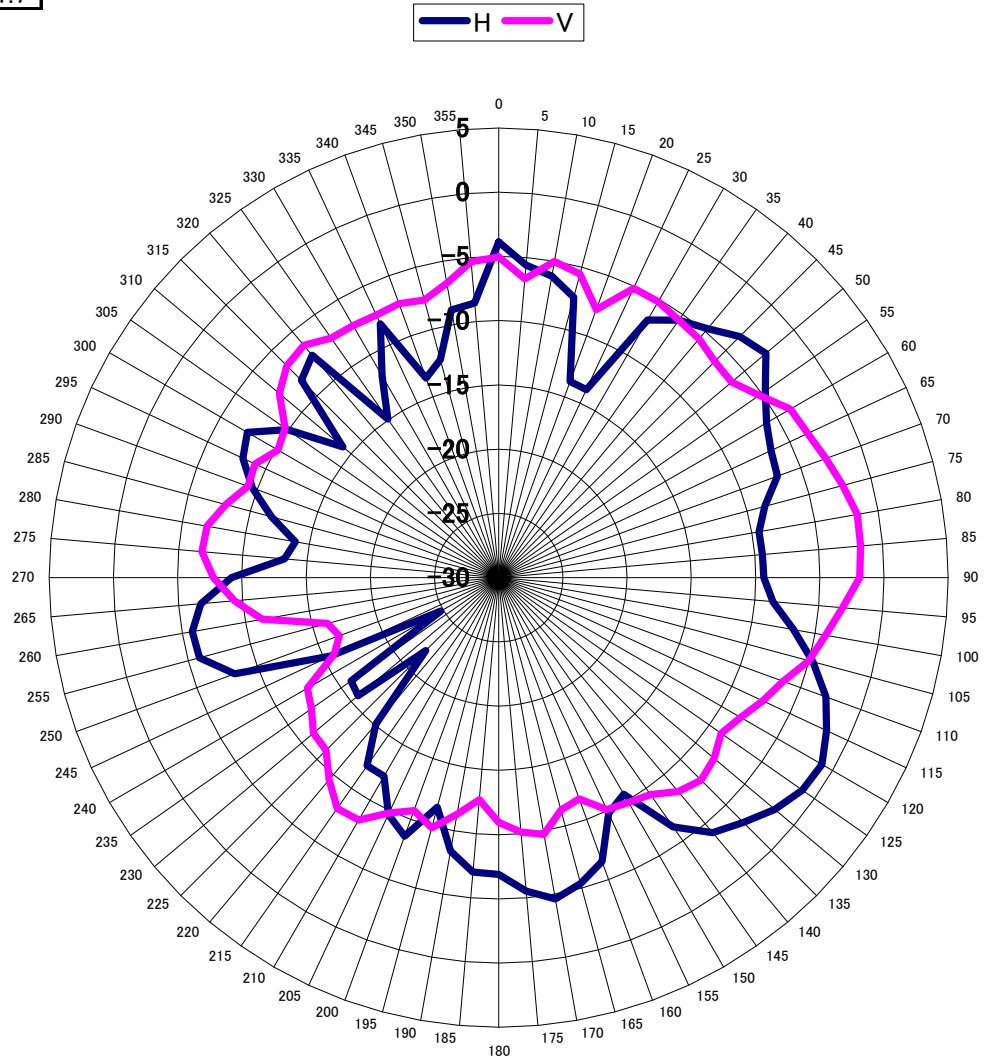
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -7.2 | -7.5 |
| MAX | -2.2 | -2.9 |



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

Main antenna: 5350 MHz

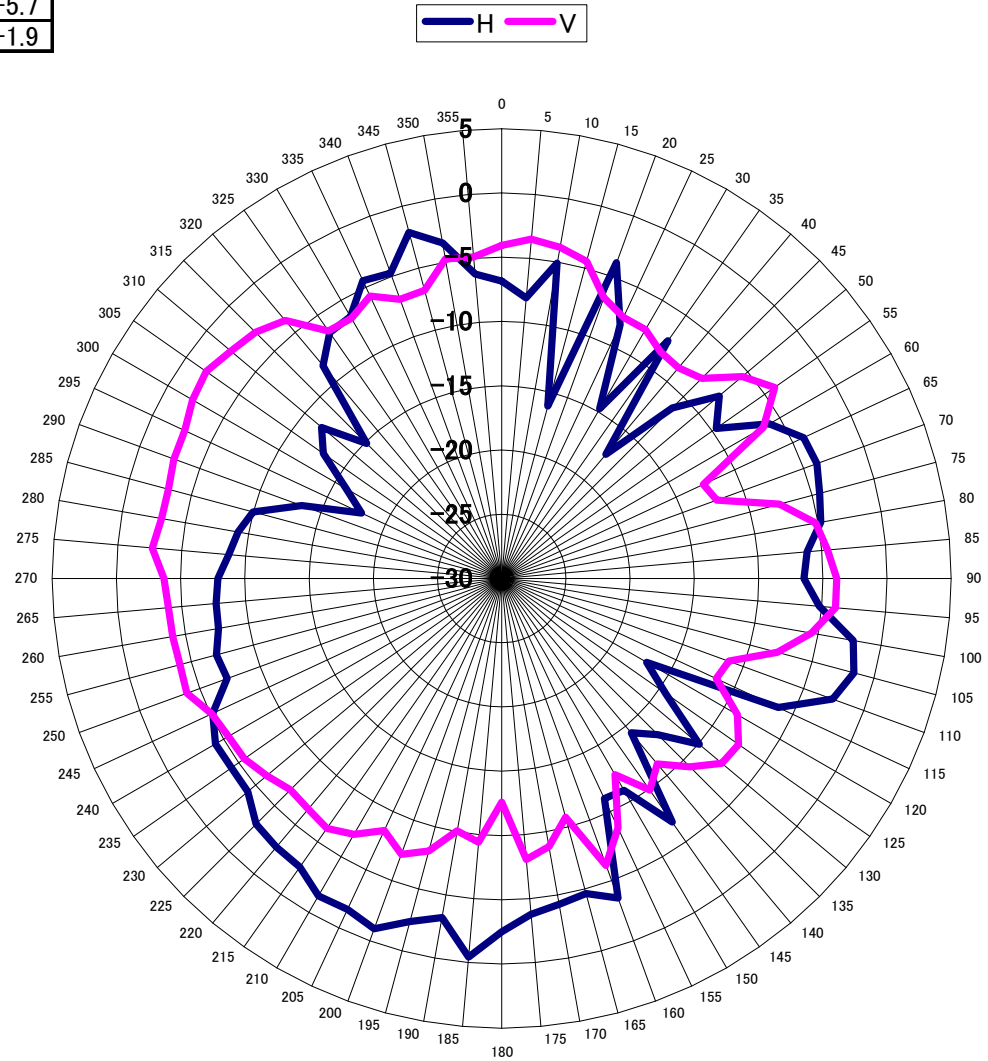
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -6.9 | -6.9 |
| MAX | -1.0 | -1.7 |



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

Auxiliary antenna: 5150 MHz

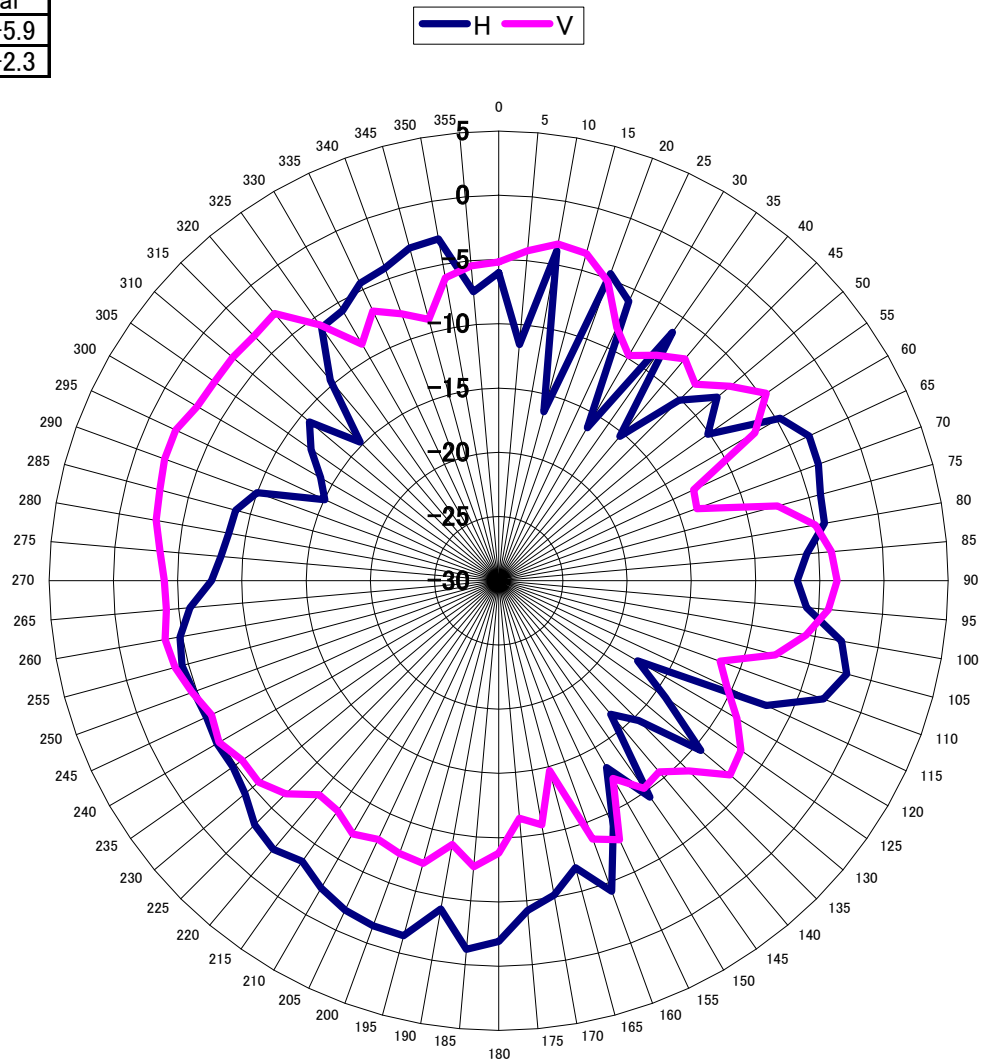
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -5.5 | -5.7 |
| MAX | -0.4 | -1.9 |



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

Auxiliary antenna: 5250 MHz

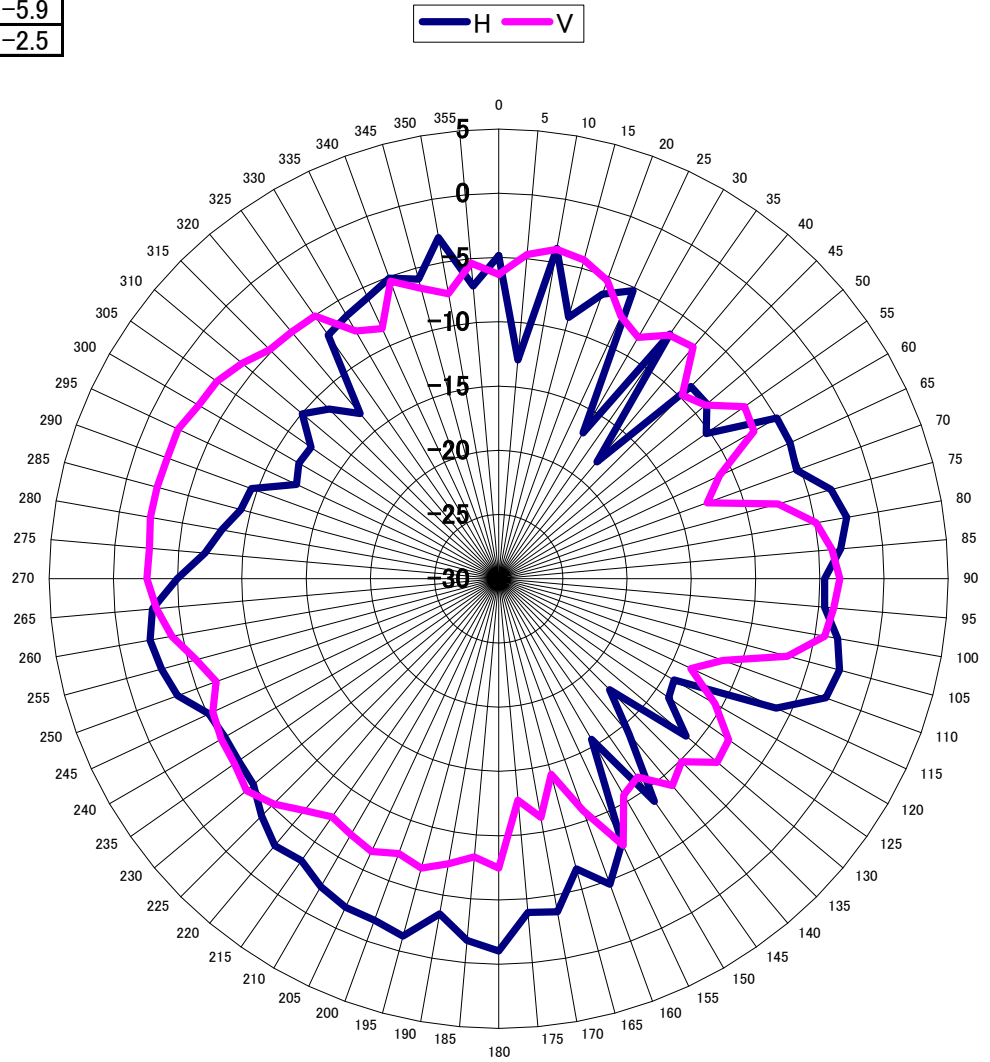
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -5.5 | -5.9 |
| MAX | -1.2 | -2.3 |



| | |
|-----------------------|----------|
| 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 |

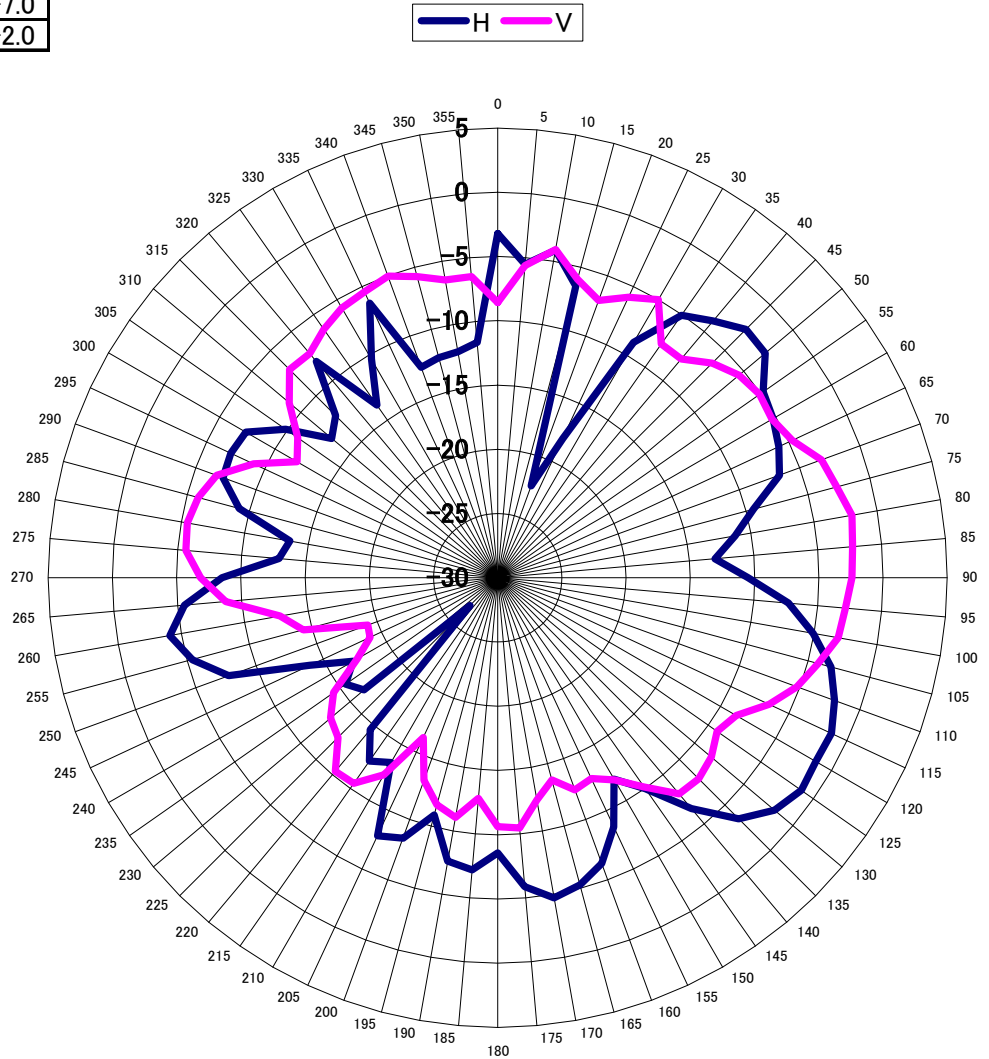


| | |
|-----------------------|----------|
| Center Frequency | 5350 MHz |
| Horizontal (dBi) peak | -1.0 |
| Vertical (dBi) peak | -2.5 |
| Horiz+Vert (dBi) peak | -1.0 |

5470-5725MHz radiation characteristic

Main antenna: 5470 MHz

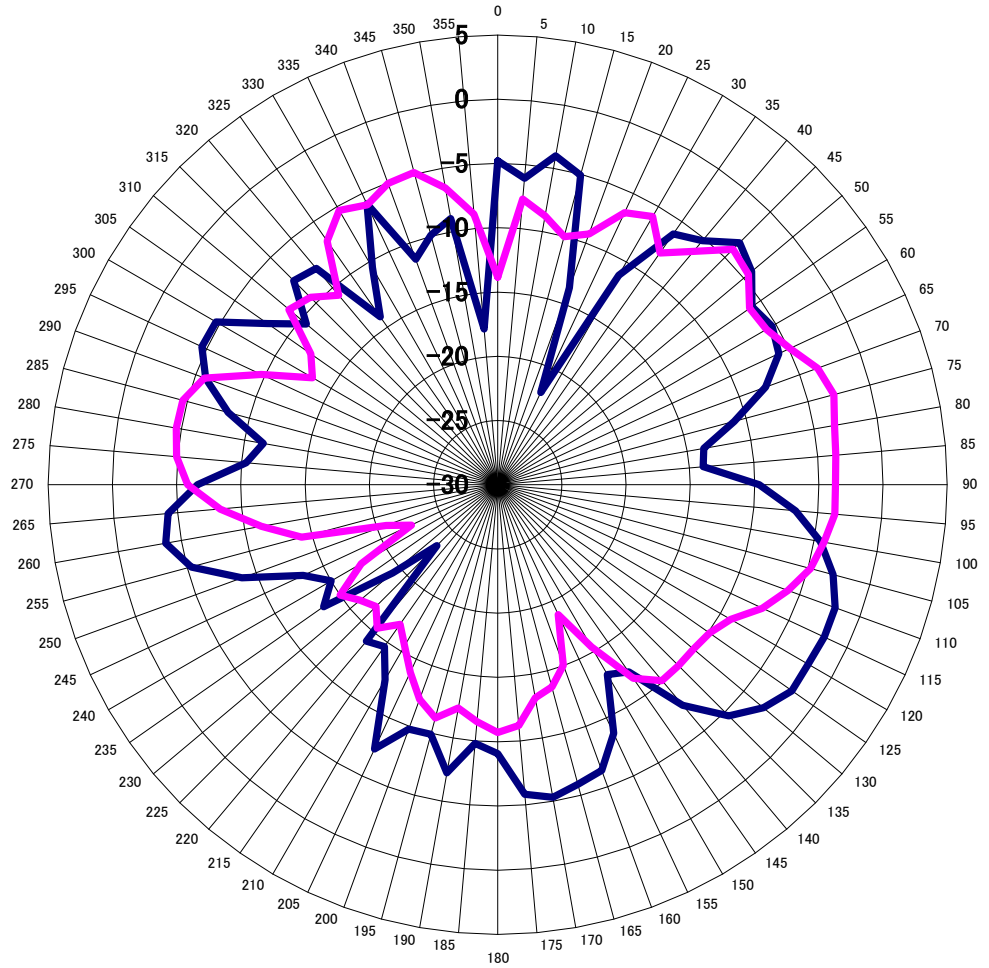
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -6.7 | -7.0 |
| MAX | -1.2 | -2.0 |



| | |
|-----------------------|----------|
| 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

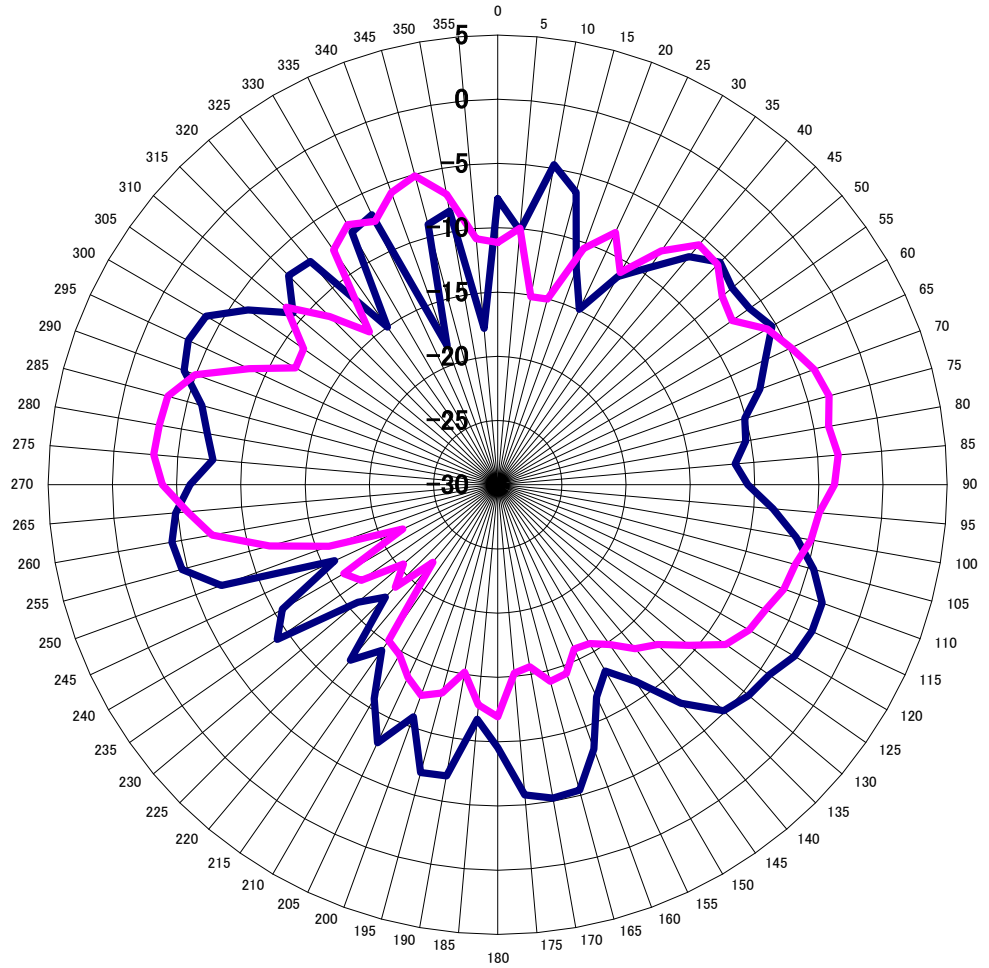
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -6.8 | -7.7 |
| MAX | -2.0 | -2.9 |



| | |
|-----------------------|------------|
| 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

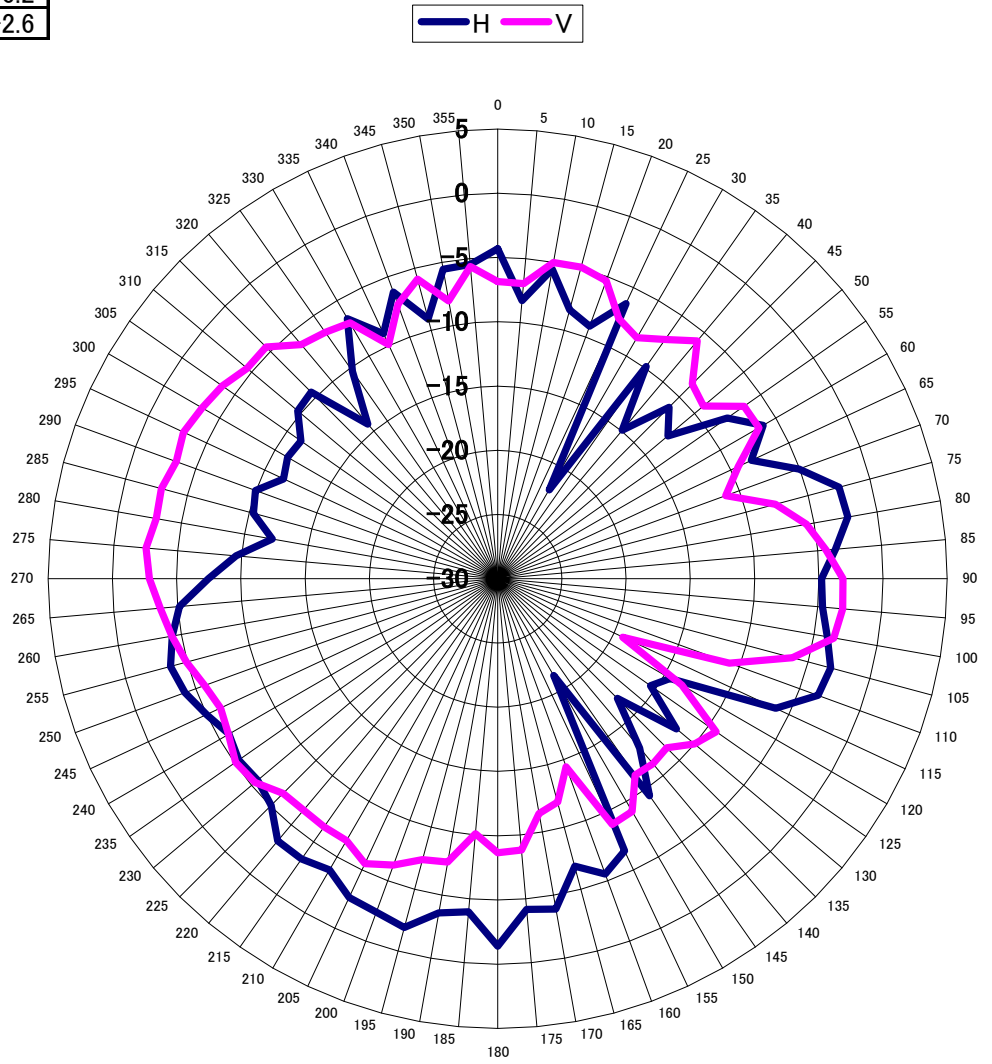
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -7.2 | -8.0 |
| MAX | -3.0 | -3.1 |



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

Auxiliary antenna: 5470 MHz

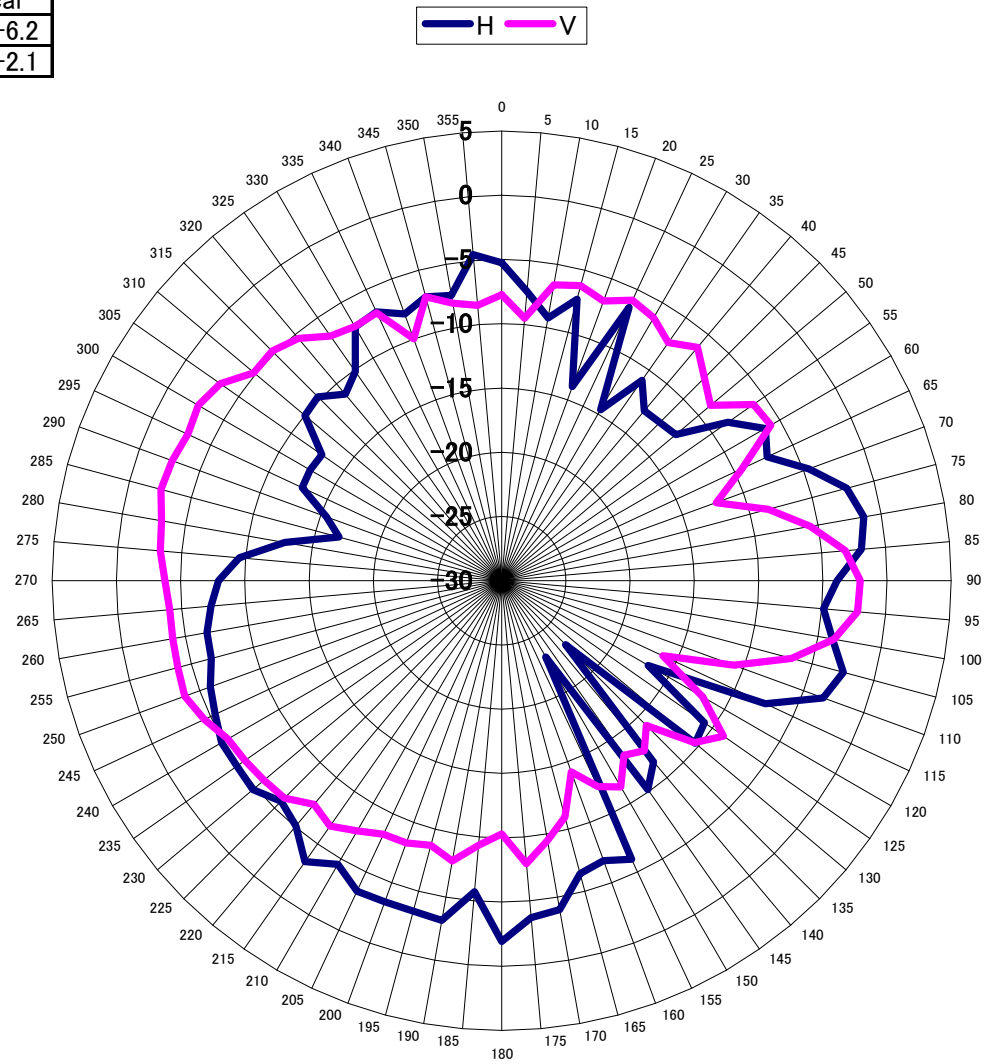
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -6.0 | -6.2 |
| MAX | -1.4 | -2.6 |



| | |
|-----------------------|----------|
| 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

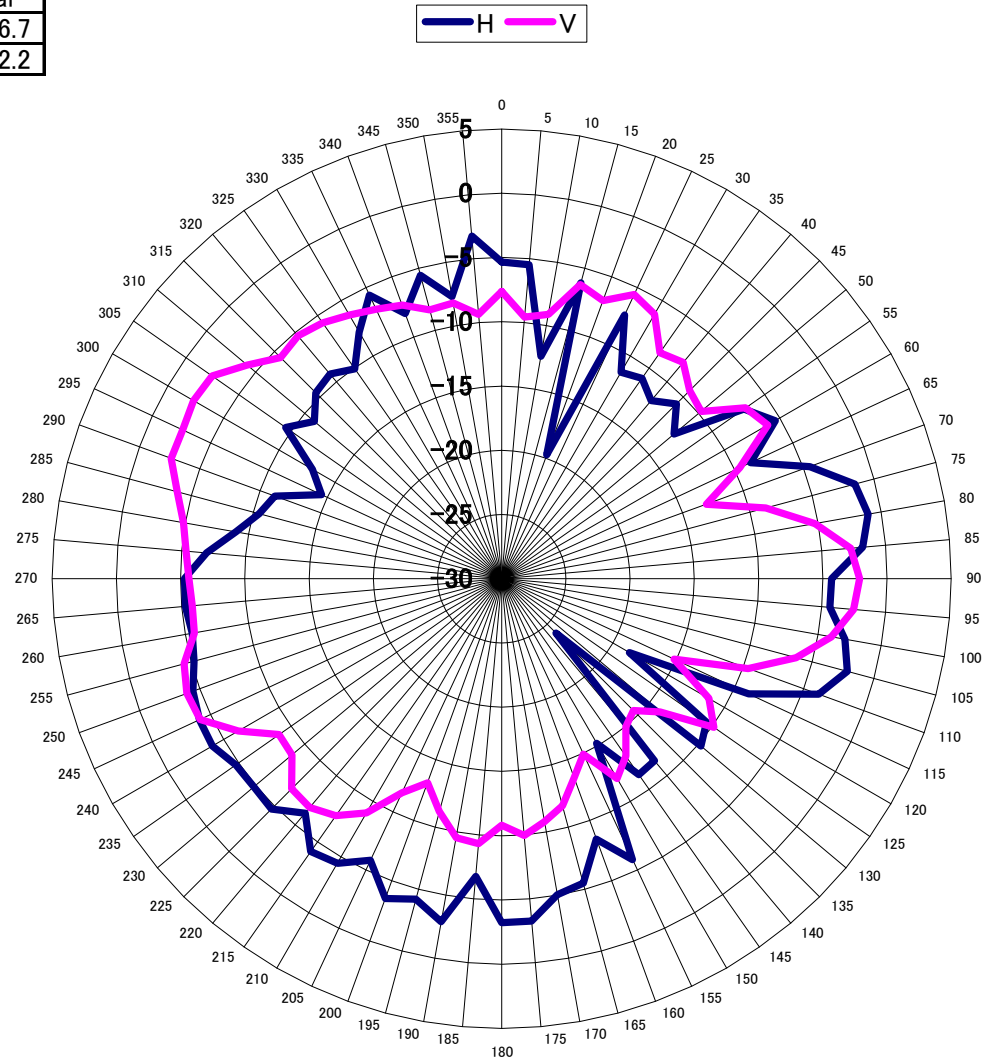
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -6.3 | -6.2 |
| MAX | -1.4 | -2.1 |



| | |
|-----------------------|------------|
| 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 |

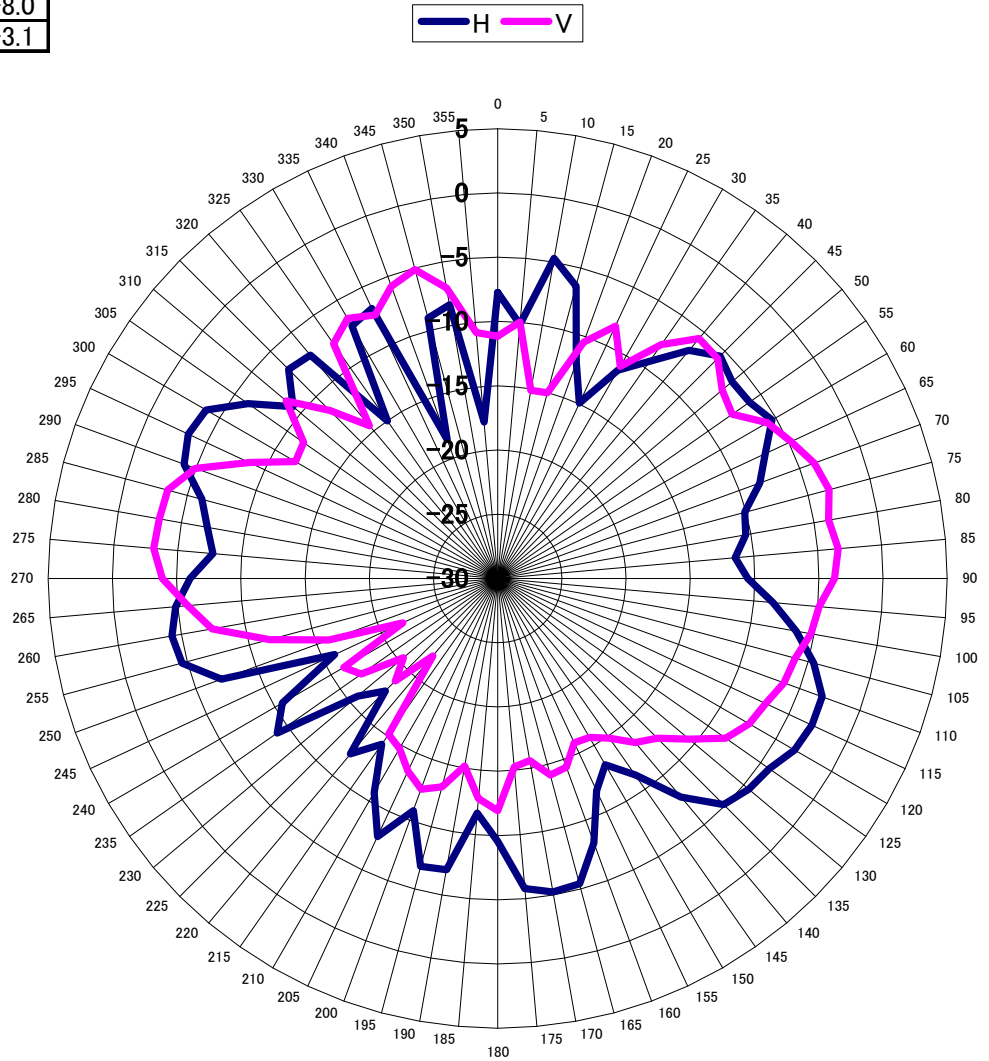


| | |
|-----------------------|----------|
| Center Frequency | 5725 MHz |
| Horizontal (dBi) peak | -1.1 |
| Vertical (dBi) peak | -2.2 |
| Horiz+Vert (dBi) peak | -1.1 |

5725-5850 MHz radiation characteristic

Main antenna: 5725 MHz

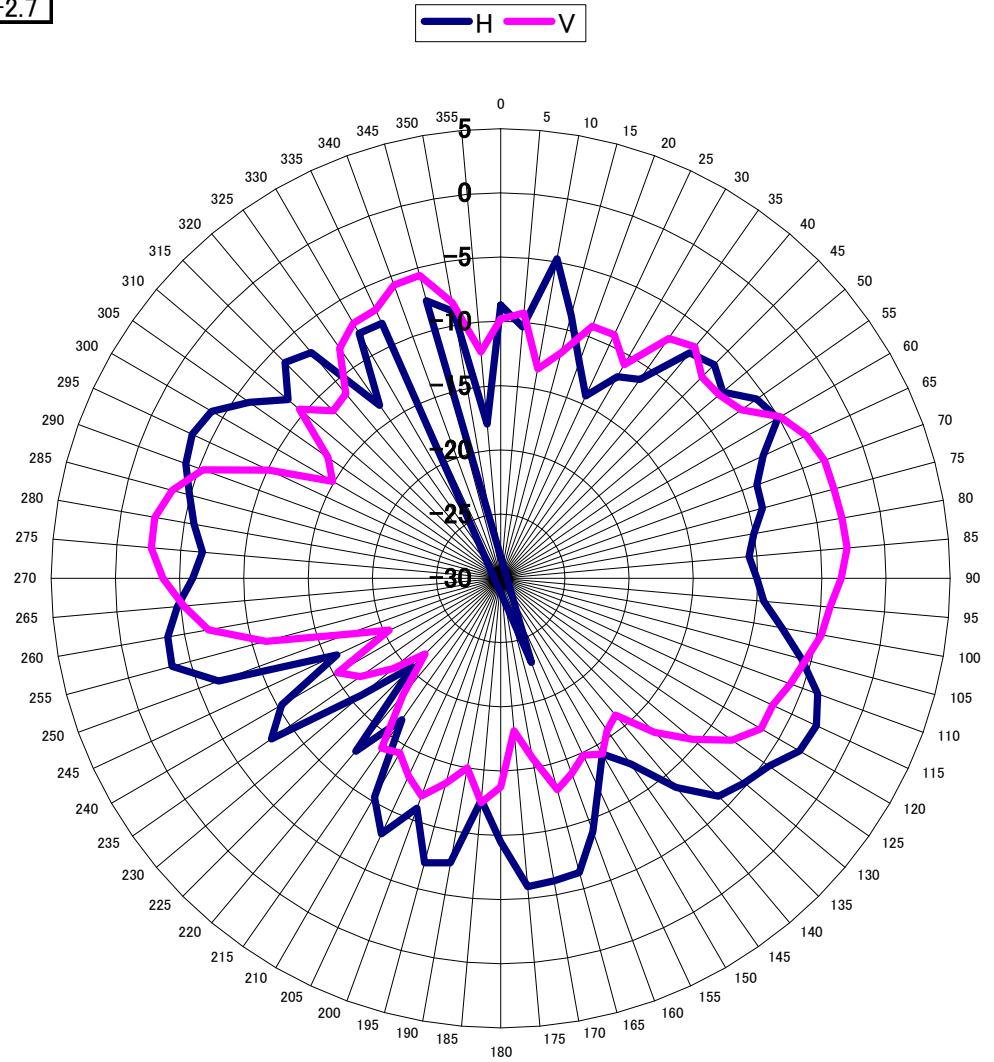
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -7.2 | -8.0 |
| MAX | -3.0 | -3.1 |



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

Main antenna: 5785 MHz

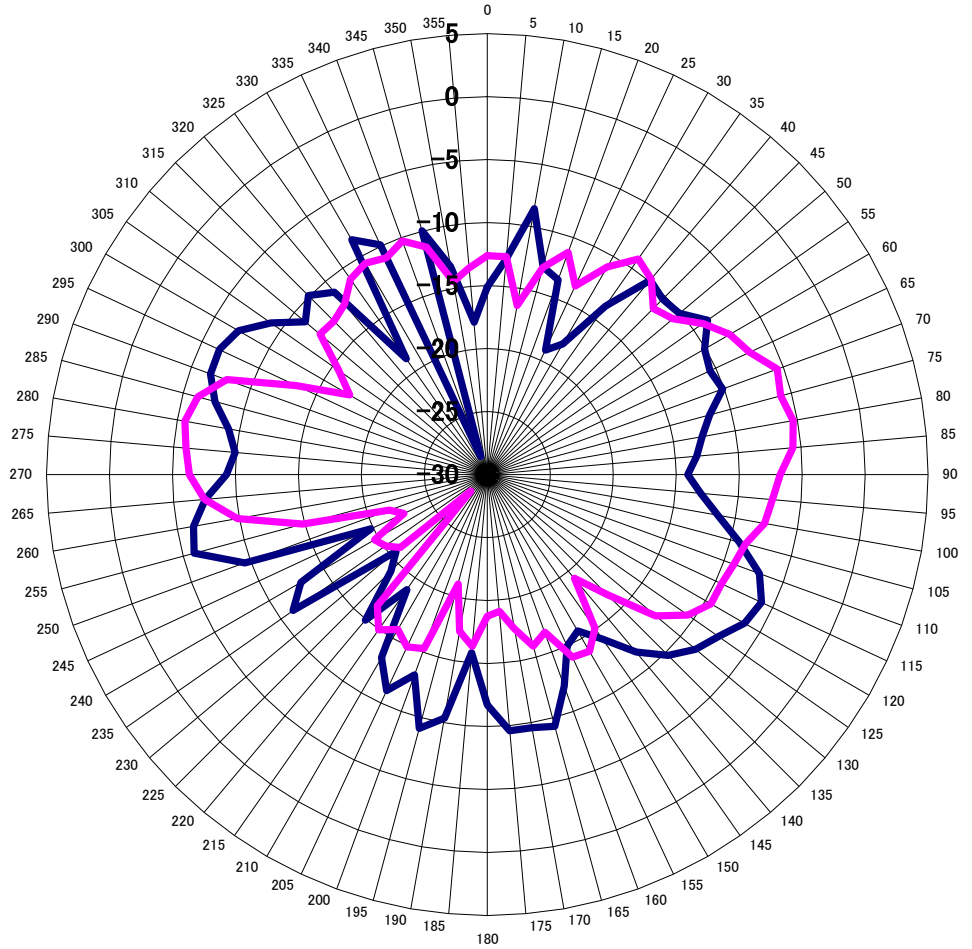
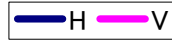
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -7.3 | -7.8 |
| MAX | -2.9 | -2.7 |



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

Main antenna: 5850 MHz

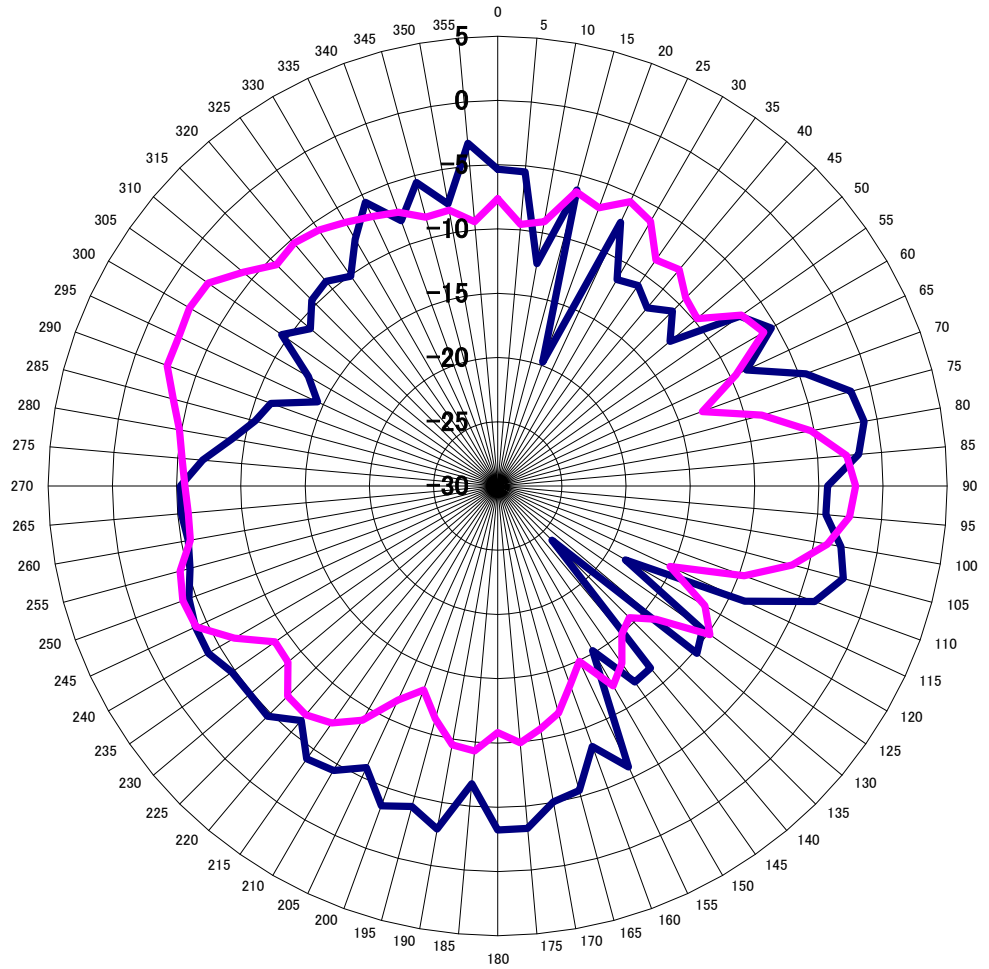
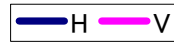
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -10.4 | -10.6 |
| MAX | -5.9 | -5.3 |



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

Auxiliary antenna: 5725 MHz

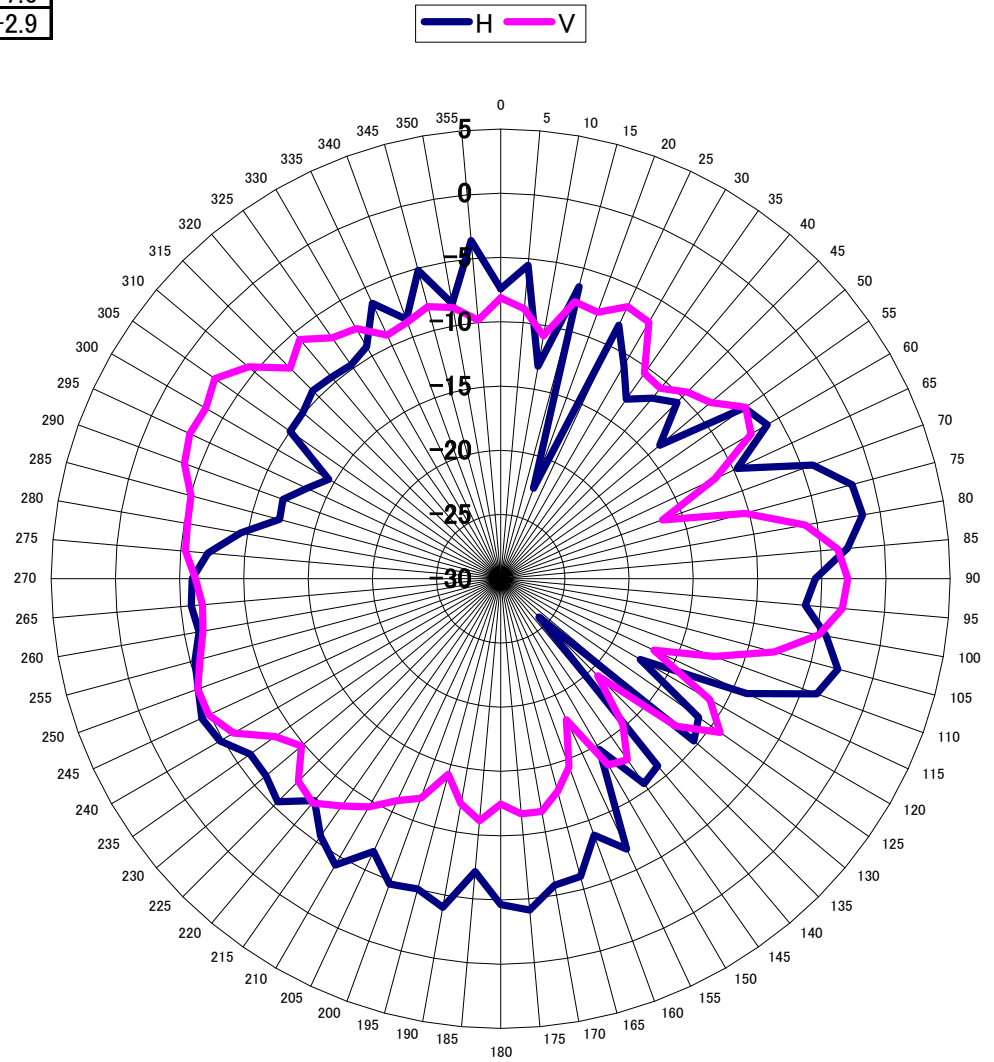
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -6.0 | -6.7 |
| MAX | -1.1 | -2.2 |



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

Auxiliary antenna: 5785 MHz

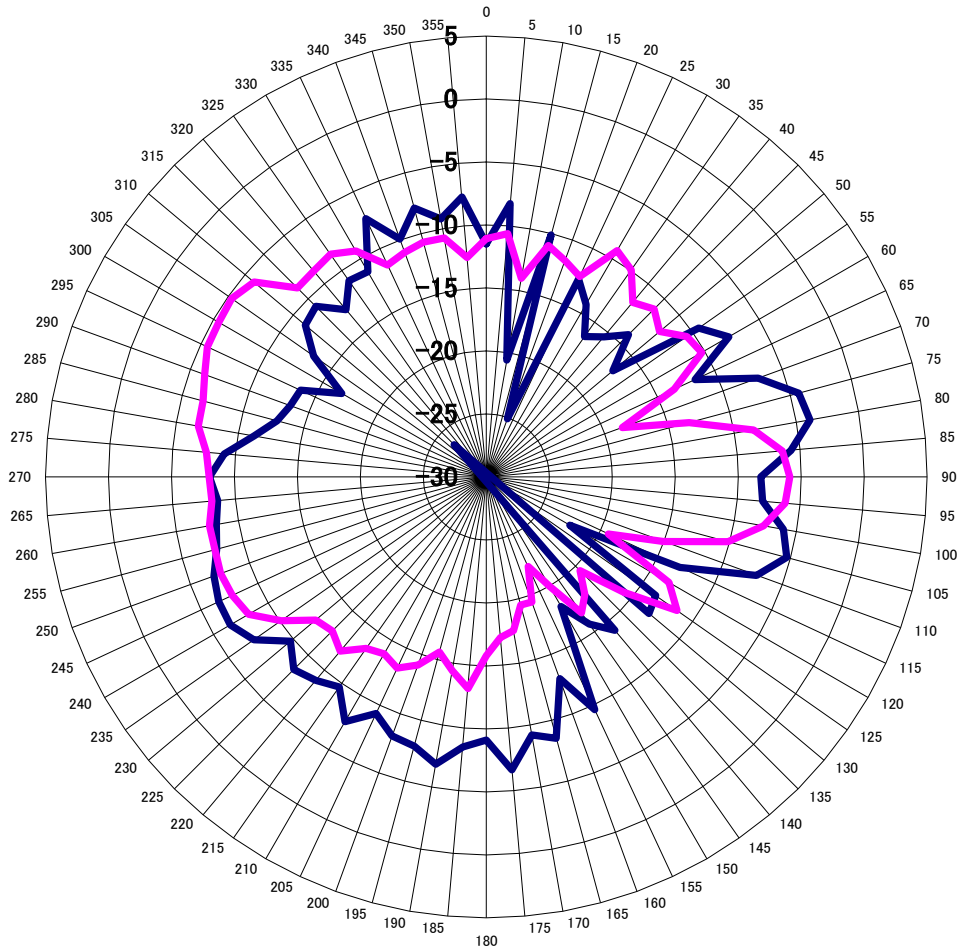
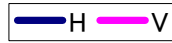
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -6.7 | -7.6 |
| MAX | -1.4 | -2.9 |



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

Auxiliary antenna: 5850 MHz

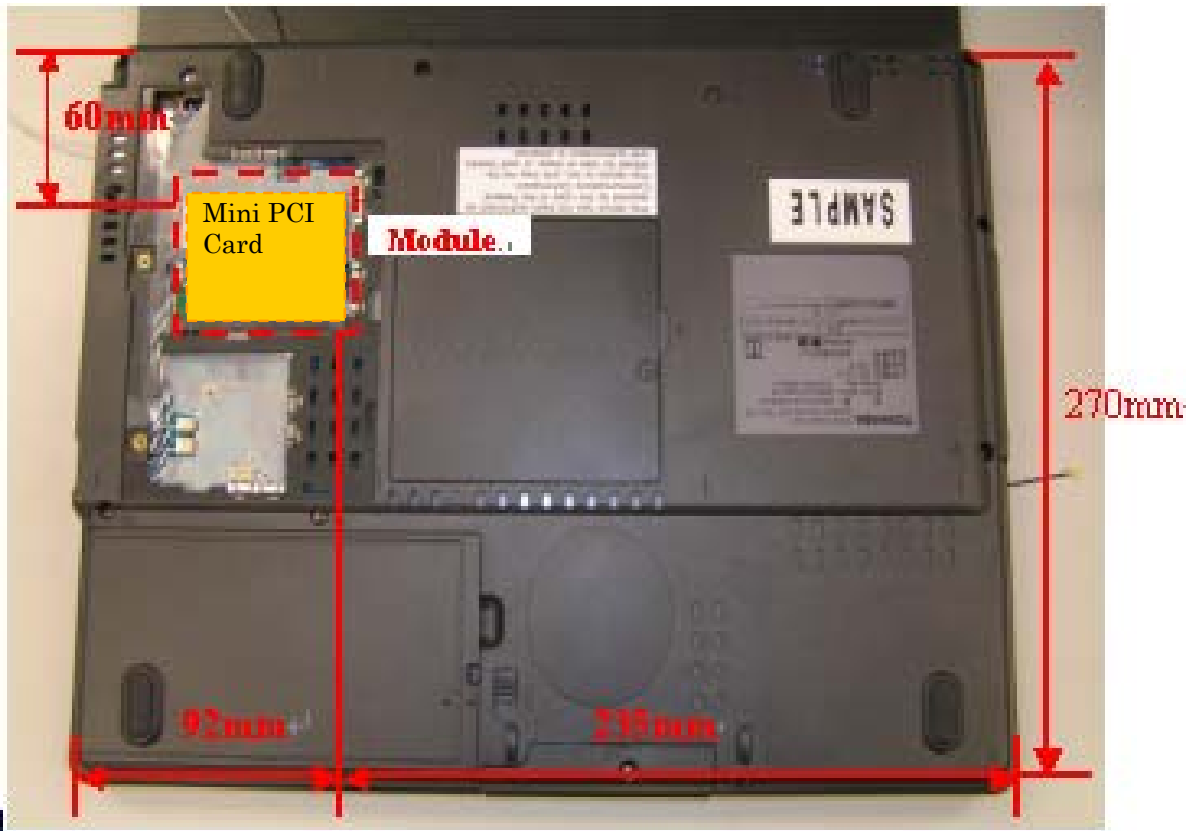
| | Horizontal | Vertical |
|-----|------------|----------|
| AVG | -9.3 | -10.0 |
| MAX | -3.9 | -5.3 |



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

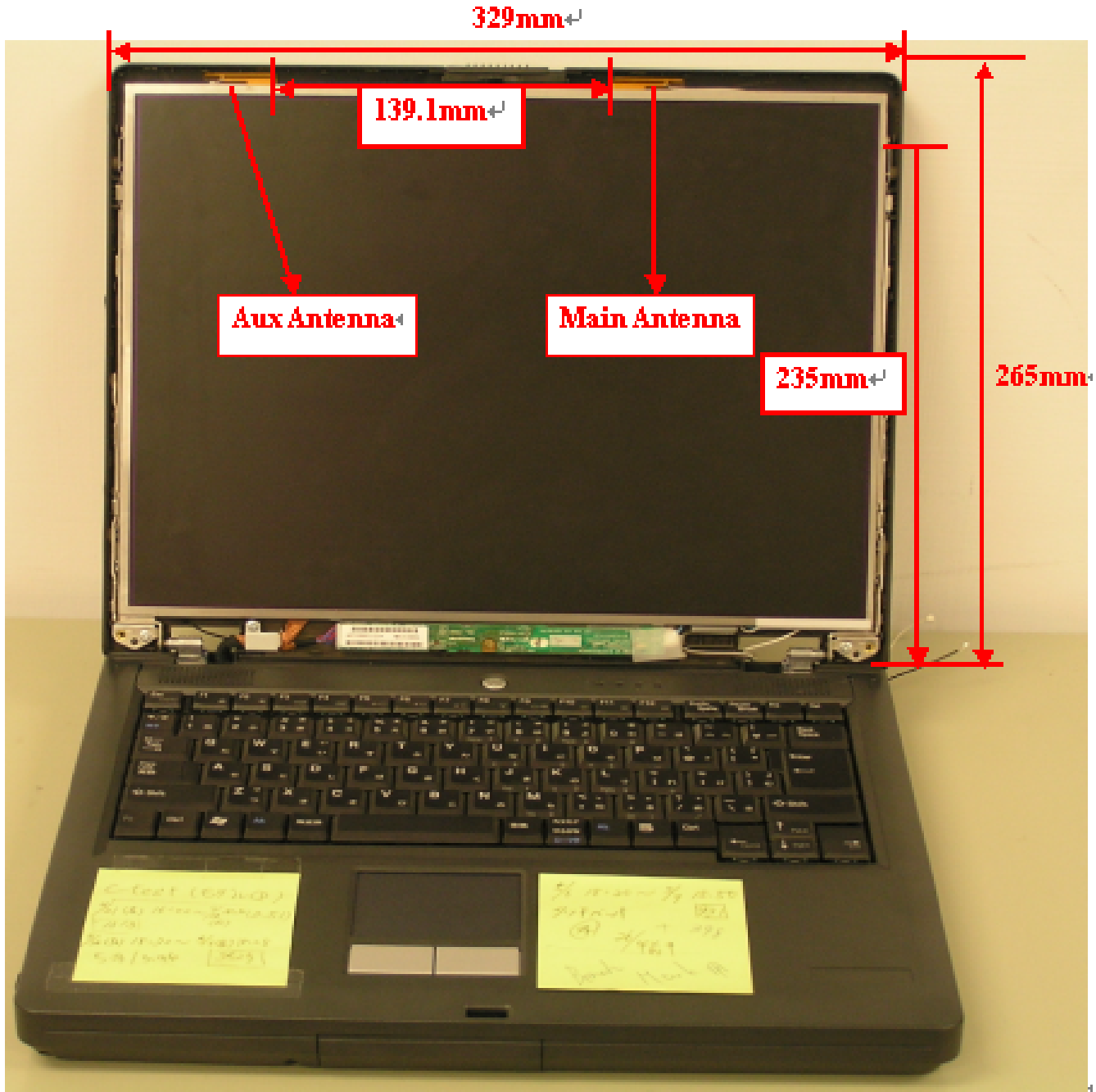
Section 4. Host Platform Information

Module Location Photo:



Section 5. Antenna Host Platform Location Information

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



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)

