



ANTENNA DATASHEET

AOT PN: ANT-HCA9N-W15

REVISION HISTORY

| REV. | Description | Date |
|------------|---------------|--------------|
| 1.0 | First release | June.18/2024 |

Want to see the latest information? Please contact us via sales@aot-corp.com

└ AOT Wireless Technology Co., Limited

上海梦蛛网无线科技有限公司

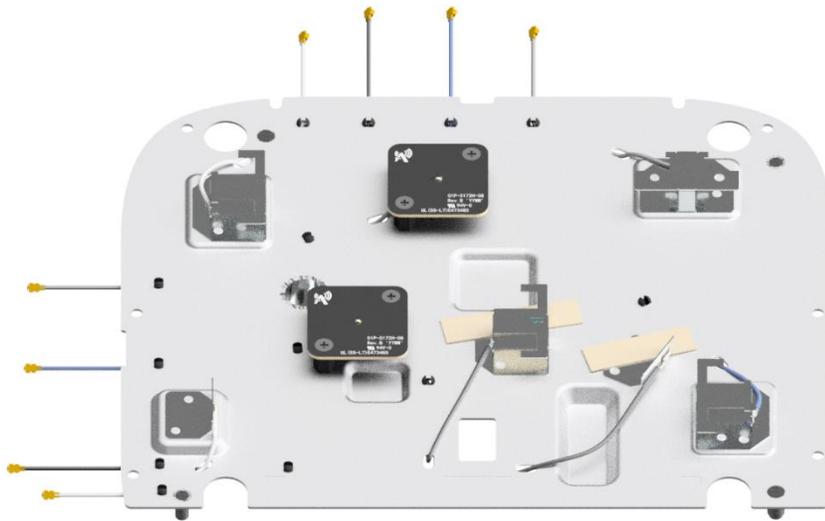


+ ANT-HCA9N-W15 Antenna

Based on AOT's patented technology, the Model ANT-HCA9N-W15 Antenna features provides a high performance, external antenna solution. The antenna supports IEEE 802.11a/b/g/n/ac/ax/6e/be wireless standards and is intended for access points. The solution is suitable for low-cost, high-performance antenna applications.

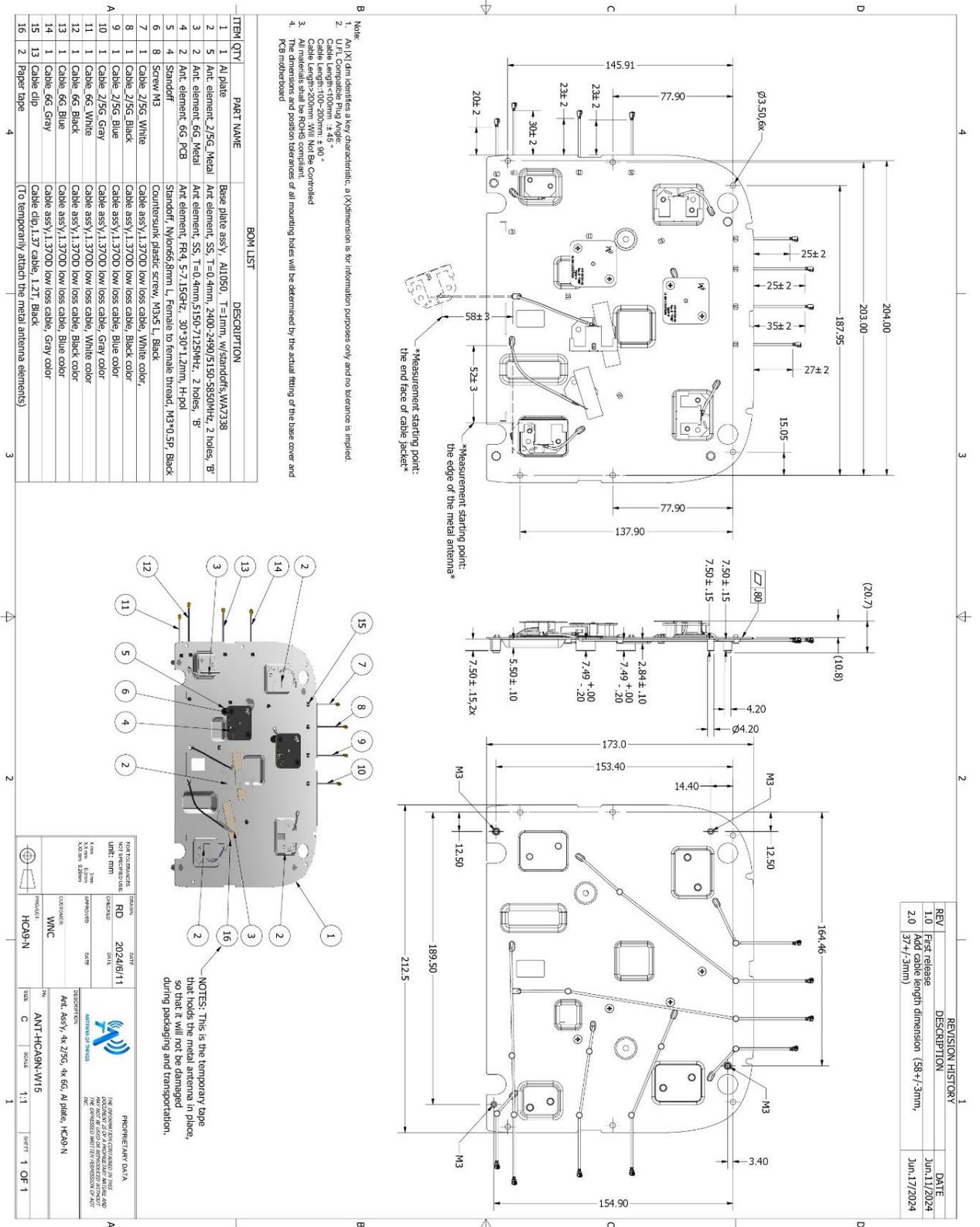
+ Features Overview

- Covering 2400-2484MHz/5150-5350MHz/5470-5730MHz/5955-6415MHz frequency
- Off-board, Cable-fed,
- Low Cost, High performance
- RoHS compliant.





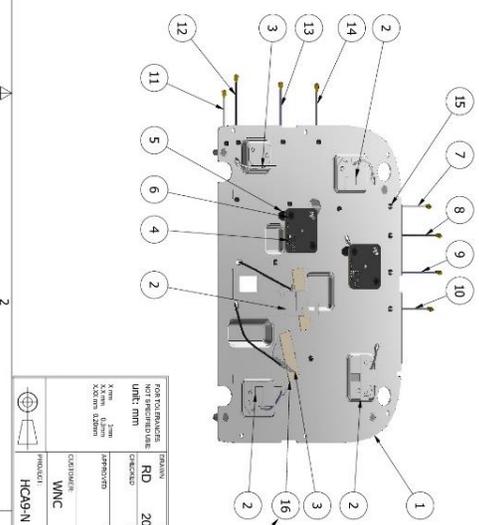
Assembly Drawing



| REVISION HISTORY | | DATE |
|------------------|---|-------------|
| REV 1.0 | First release | Jun.11/2024 |
| REV 2.0 | Add cable length dimension (58+/-3mm, 37+/-3mm) | Jun.17/2024 |

- Note:
- Ant [X] dim identifies a key characteristic, a [X] dimension is for information purposes only and no tolerance is implied.
 - U/I: Compatible Plug Angle: Cable Length: 100~200mm ± 90°
 - Cable Length: >200mm: Will Not Be Controlled
 - All materials shall be ROHS compliant.
 - All dimensions and position tolerances of all mounting holes will be determined by the actual fitting of the base cover and PC9 connector.

| ITEM QTY | PART NAME | DESCRIPTION |
|----------|---------------------------|---|
| 1 | AI plate | Base plate ass'y, AI1050, T=1mm, w/standoffs,WA7238 |
| 2 | Ant. element, 2/5G, Metal | Ant. element, SS, T=0.4mm, 2400-2490/5150-5850MHz, 2 holes, 'B' |
| 3 | Ant. element, 6G, Metal | Ant. element, SS, T=0.4mm, 5150-7125MHz, 2 holes, 'B' |
| 4 | Ant. element, 6G, PCB | Ant. element, FR4, 5.7-15GHz, 30*30*1.2mm, H-pol |
| 5 | Standoff | Standoff, Ni9966g9mm L, Female to female thread, M3x0.5P, Black |
| 6 | Screw M3 | Countersunk plastic screw, M3x5 L, Black |
| 7 | Cable 2/5G, White | Cable ass'y, 1.370D low loss cable, White color, |
| 8 | Cable 2/5G, Blue | Cable ass'y, 1.370D low loss cable, Blue color, |
| 9 | Cable 2/5G, Gray | Cable ass'y, 1.370D low loss cable, Gray color, |
| 10 | Cable 2/5G, White | Cable ass'y, 1.370D low loss cable, White color, |
| 11 | Cable 6G, White | Cable ass'y, 1.370D low loss cable, White color, |
| 12 | Cable 6G, Black | Cable ass'y, 1.370D low loss cable, Black color, |
| 13 | Cable 6G, Blue | Cable ass'y, 1.370D low loss cable, Blue color, |
| 14 | Cable 6G, Gray | Cable ass'y, 1.370D low loss cable, Gray color, |
| 15 | Cable clip | Cable clip, 1.37 cable, 1.2T, Black |
| 16 | Paper tape | (To temporarily attach the metal antenna elements) |



NOTES: This is the temporary tape that holds the metal antenna in place, so that it will not be damaged during packaging and transportation.

| FROM THE BRANCHES | | REVISION | DATE |
|-------------------|----------|-----------|------|
| UNIT: mm | RD | 2024/6/11 | |
| DATE: 2024/6/11 | DESIGNER | | |
| DATE: 2024/6/11 | CHECKER | | |
| DATE: 2024/6/11 | APPROVER | | |
| DATE: 2024/6/11 | DATE | | |

| PROJECT | MODEL | NO. | SCALE | SHEET |
|---------|-------|---------------|-------|--------|
| HCA9-N | WNC | ANT-HCA9N-W15 | 1:1 | 1 OF 1 |



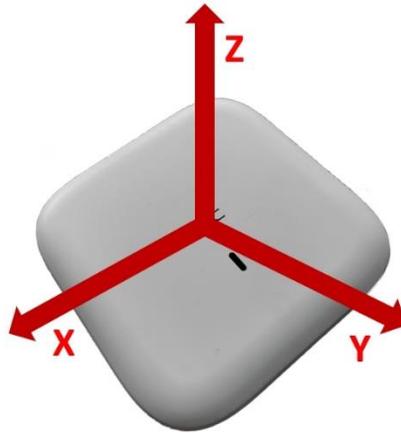
Specifications and Interface

| | |
|----------------------------|--|
| Wireless Standard | IEEE 802.11 a/b/g/n/ac/ax, WiFi 6E/WiFi 7 |
| Frequency Bands | 2400 -2484MHz/5150-5350MHz/5470-5730MHz/5955MHz-6415MHz |
| Peak Realized Gain | 5.16dBi@2.4GHz/7.5dBi@5GHz/7.27dBi@6GHz |
| Realized Efficiency | >74%@2.4GHz/>53%@5GHz/>55%@6GHz |
| VSWR | <1.9@2.4GHz/<1.9@5GHz/<1.9@6GHz |
| Polarization | Linear Polarization |
| Radiation Pattern | Omni-directional |
| Feed Impedance | 50Ω |
| Power Handling | 30dBm |
| Antenna Structure | PCB Antenna/Stamped Metal Antenna |
| Feeding Description | Cable Feeding |
| Antenna Dimensions | 173.0 x 212.5 x 20.7(mm) |
| Weight | 120 g |
| Temperature Range | Operating temperature: -40° C to +75° C (-40° F to +167° F) Storage temperature: -40° C to +85° C (-40° F to +185° F) |

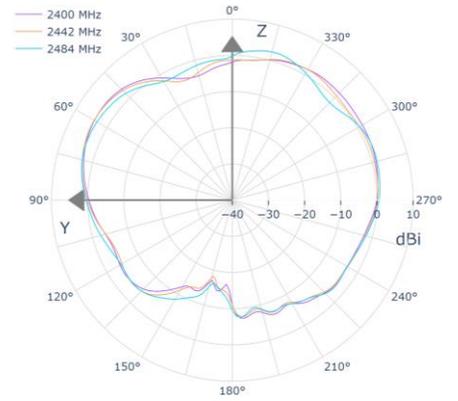
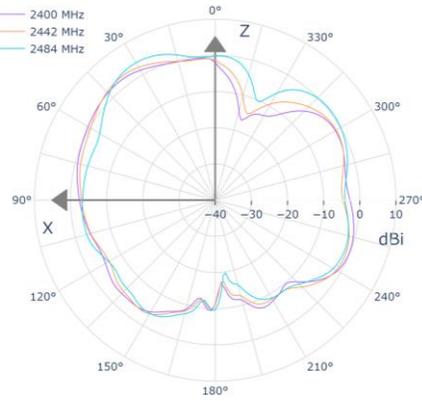
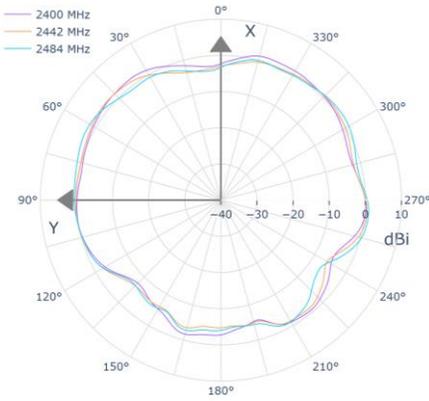


Radiation Patterns

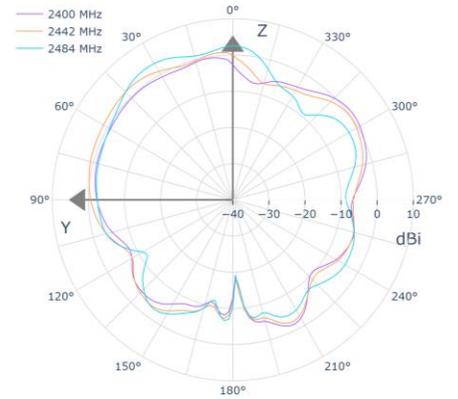
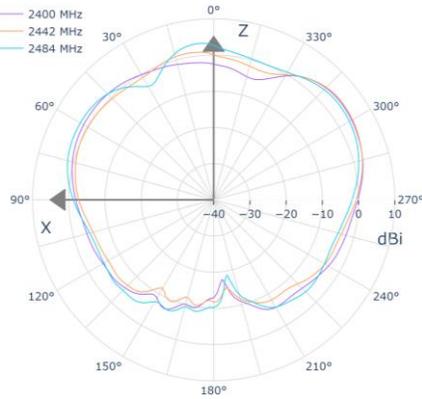
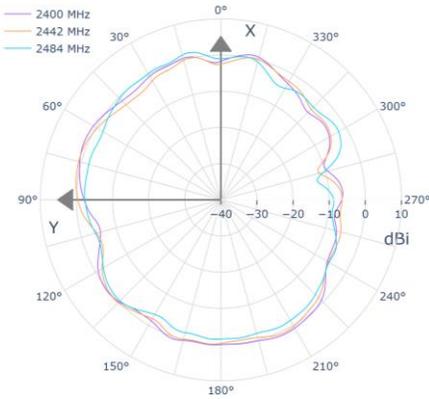
Radiation patterns were taken with the antenna in testing Chamber



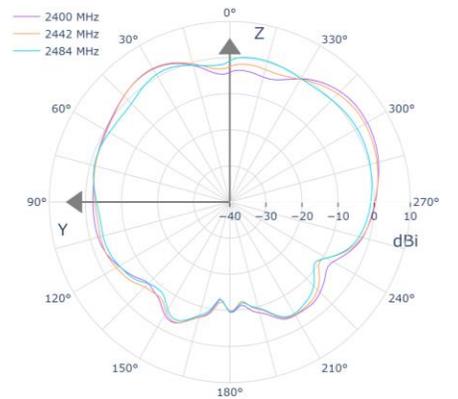
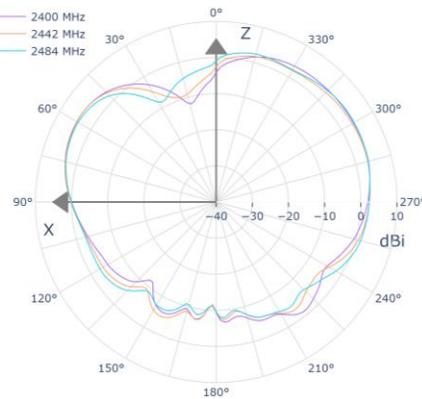
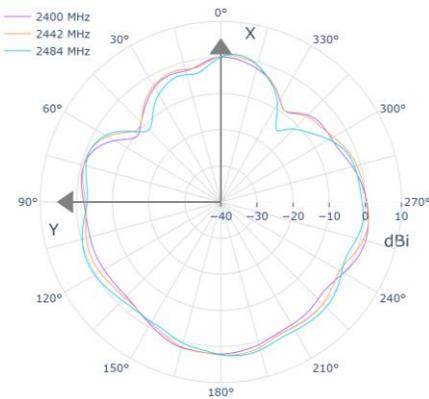
Antenna integrated in customer's housing for radiation pattern



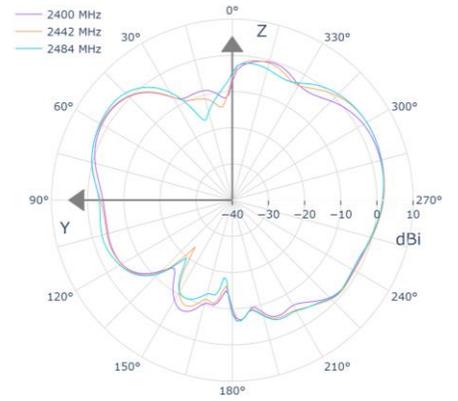
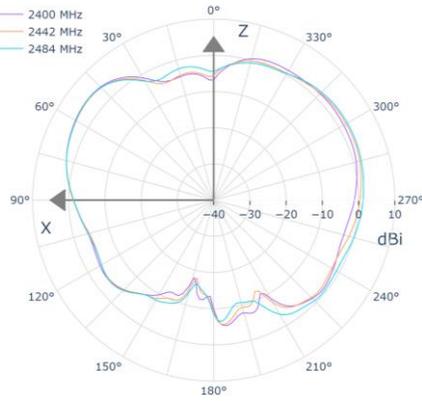
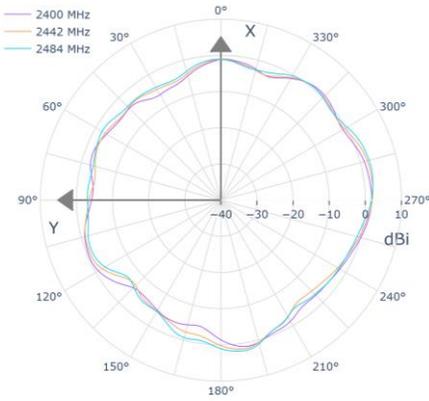
Model ANT-HCA9N-W15 Antenna of A1_Dual Radiation Patterns at 2G



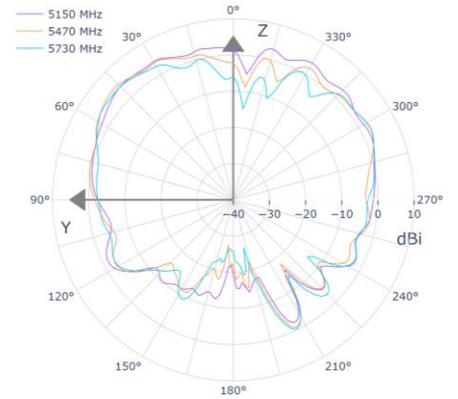
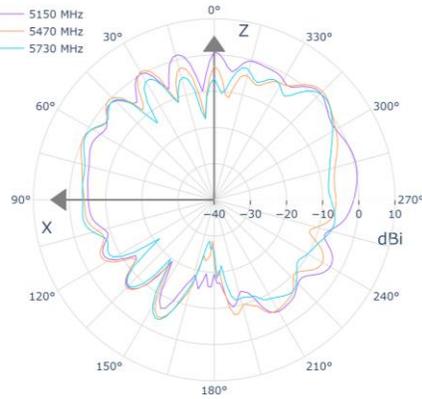
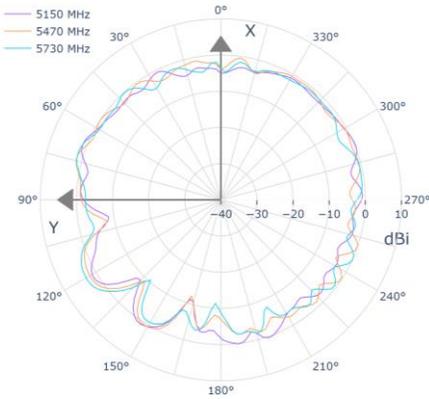
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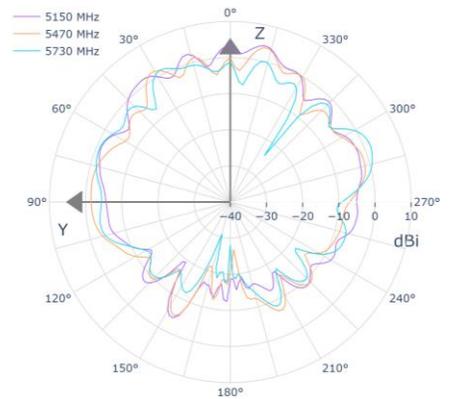
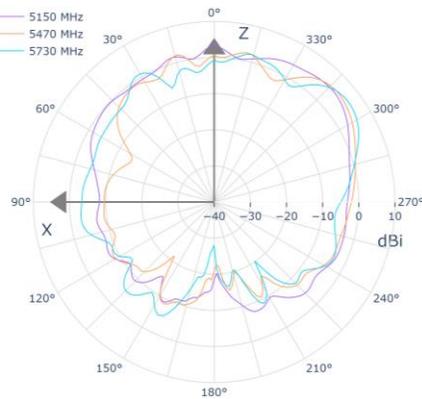
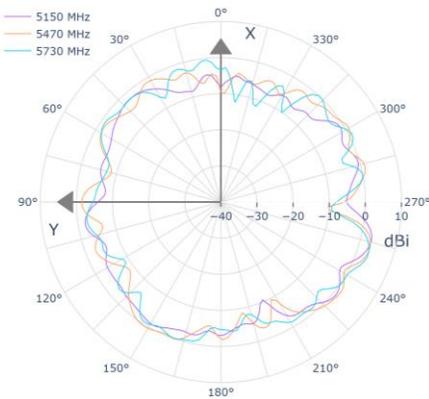
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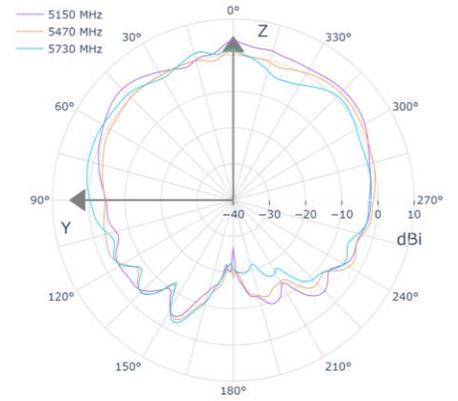
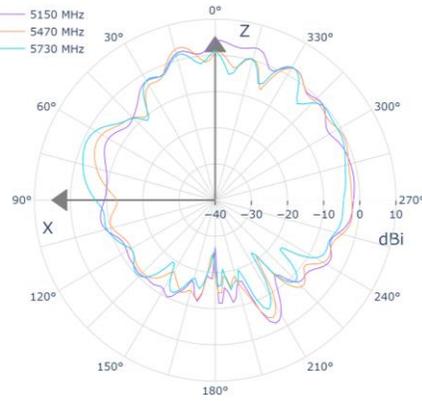
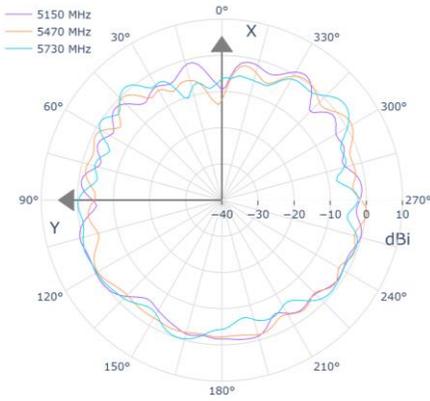
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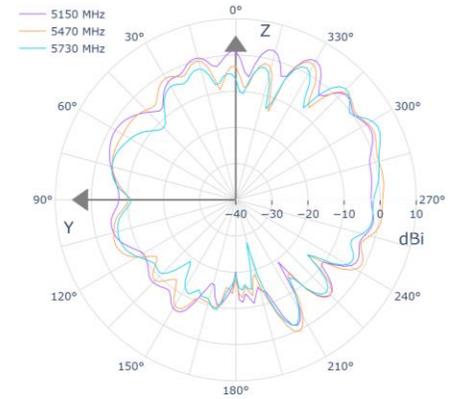
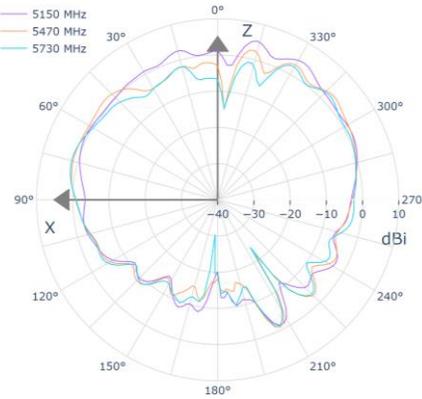
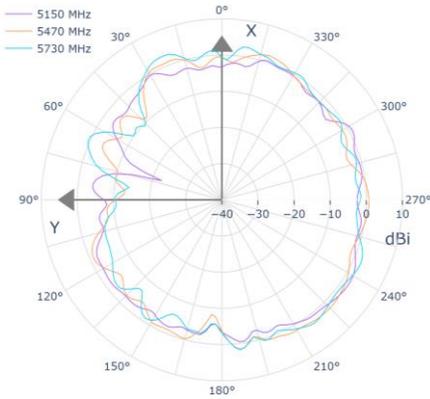
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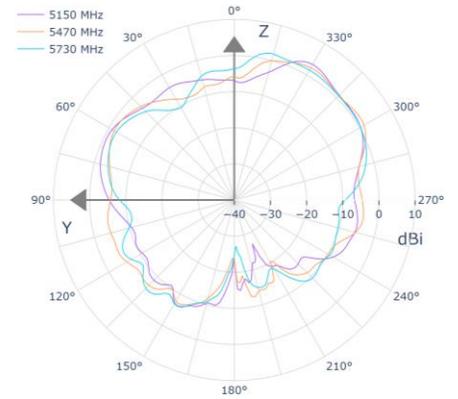
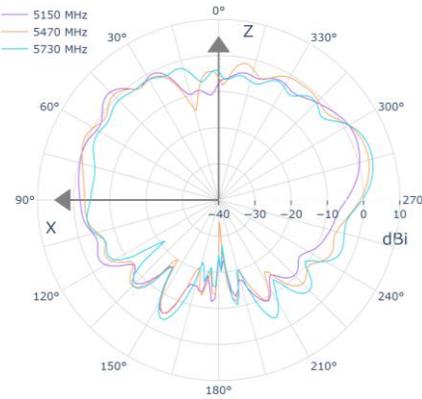
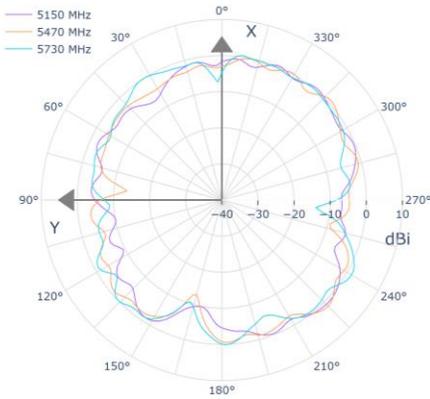
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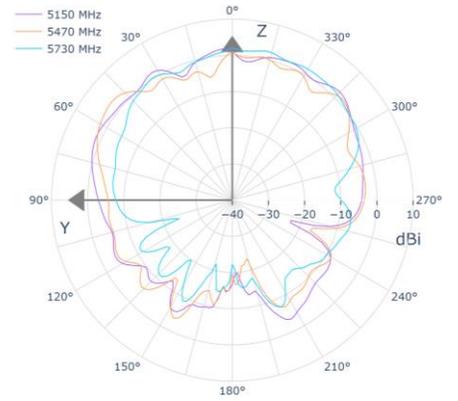
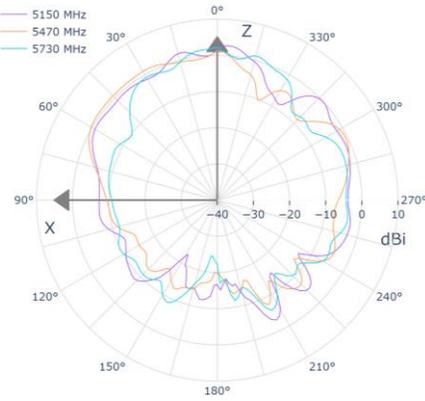
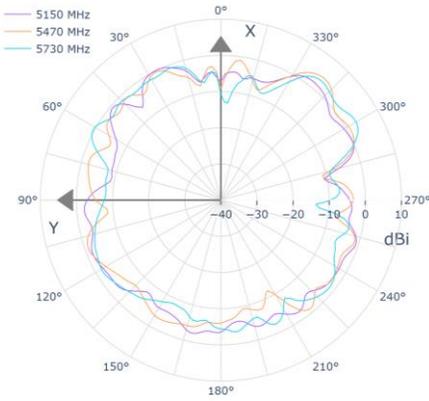
Model ANT-HCA9N-W15 Antenna of A5_Dual Radiation Patterns at 5G



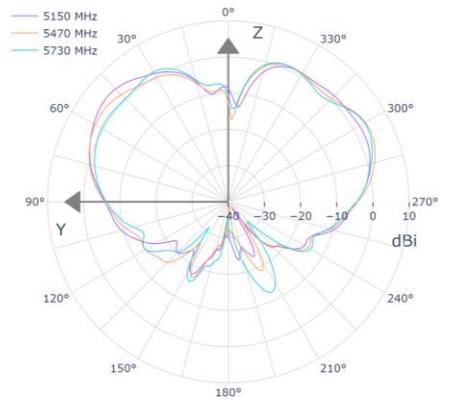
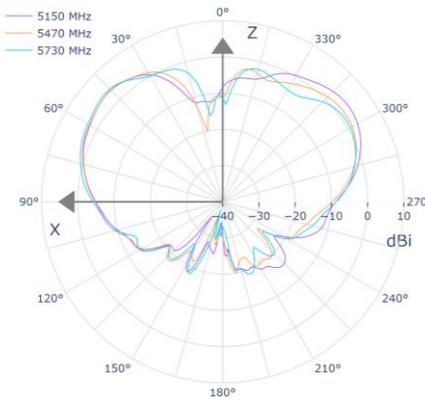
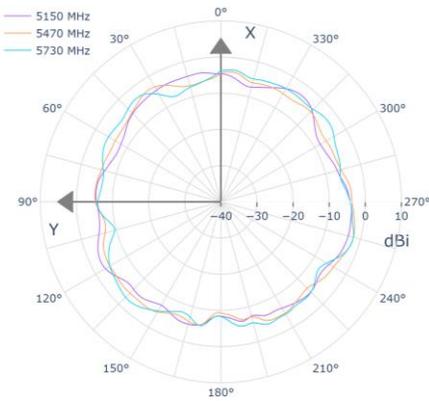
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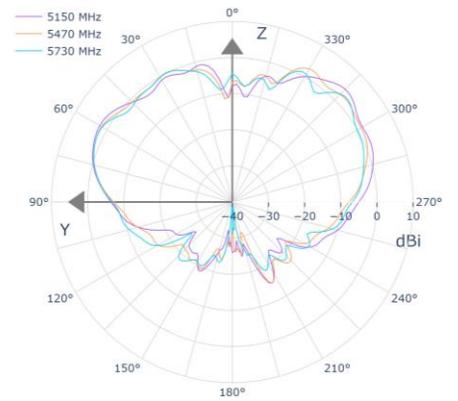
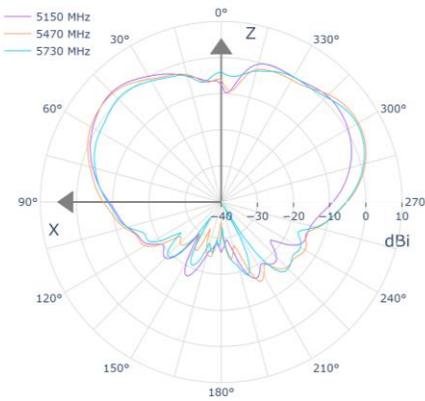
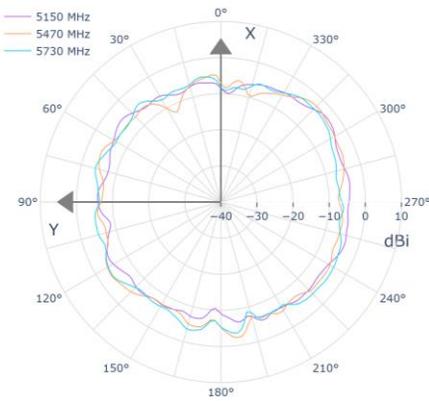
Model ANT-HCA9N-W15 Antenna of A2_5G_6G Radiation Patterns at 5G



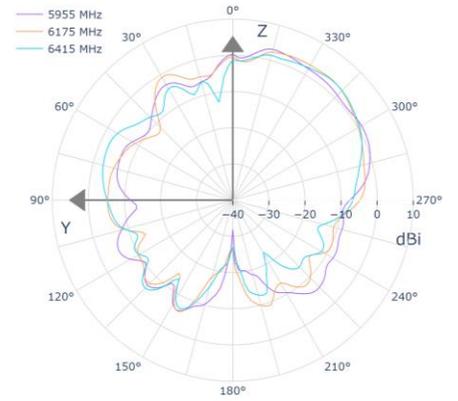
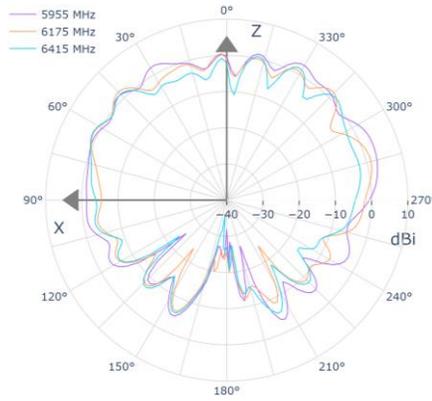
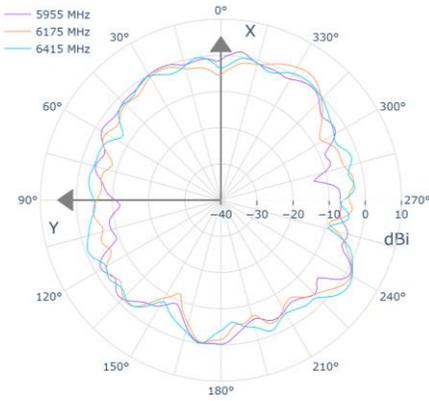
Model ANT-HCA9N-W15 Antenna of A4_5G_6G Radiation Patterns at 5G



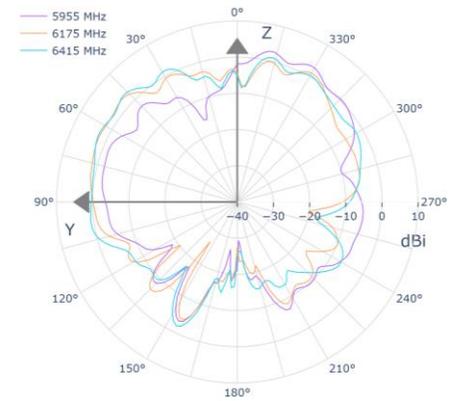
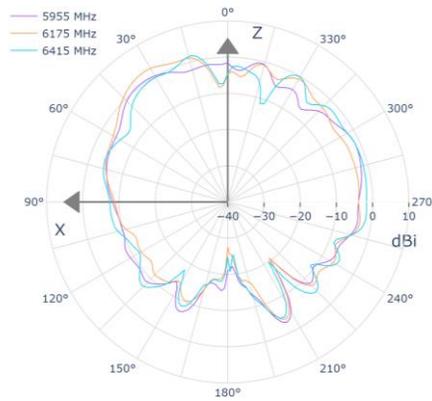
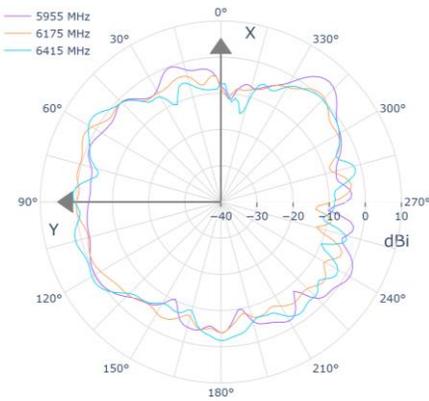
Model ANT-HCA9N-W15 Antenna of A7_5G_6G Radiation Patterns at 5G



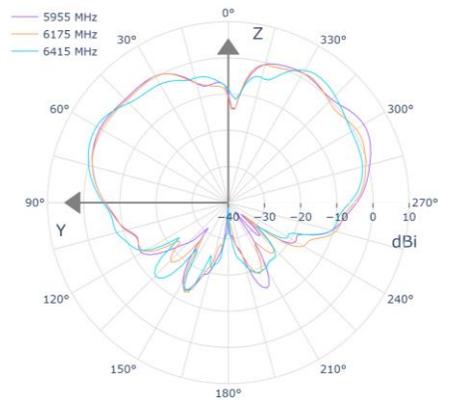
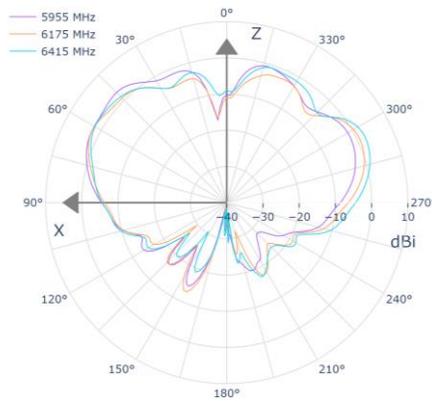
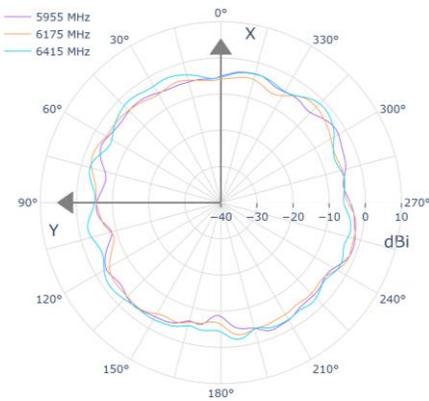
Model ANT-HCA9N-W15 Antenna of A8_5G_6G Radiation Patterns at 5G



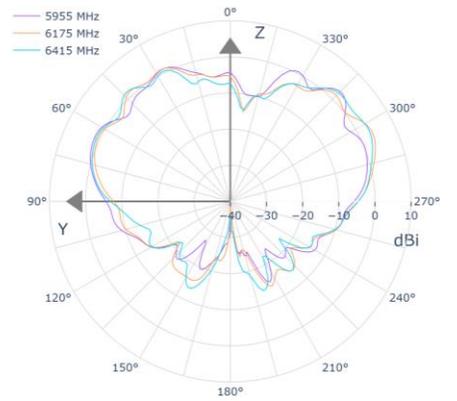
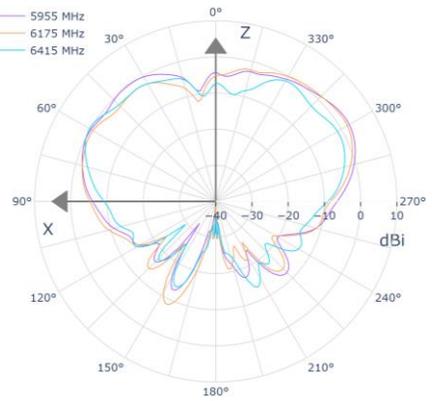
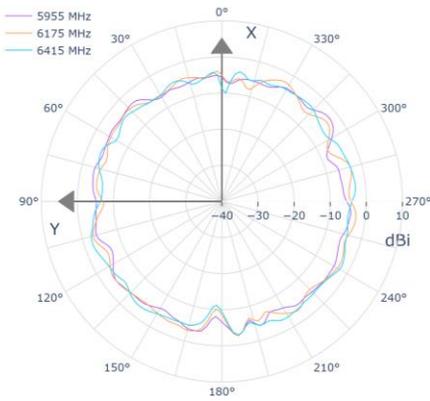
Model ANT-HCA9N-W15 Antenna of A2_5G_6G Radiation Patterns at 6G



Model ANT-HCA9N-W15 Antenna of A4_5G_6G Radiation Patterns at 6G



Model ANT-HCA9N-W15 Antenna of A7_5G_6G Radiation Patterns at 6G



Model ANT-HCA9N-W15 Antenna of A8_5G_6G Radiation Patterns at 6G



Realized Efficiency & Peak Realized Gain

| Frequency | A1_Dual | A3_Dual | A5_Dual | A6_Dual |
|-----------|---------|---------|---------|---------|
| (MHz) | (%) | (%) | (%) | (%) |
| 2400 | 82 | 79 | 78 | 77 |
| 2442 | 80 | 75 | 79 | 74 |
| 2484 | 81 | 68 | 80 | 77 |
| 2400 | 82 | 79 | 78 | 77 |
| 2442 | 80 | 75 | 79 | 74 |
| 2484 | 81 | 68 | 80 | 77 |
| 5150 | 70 | 70 | 72 | 75 |
| 5250 | 72 | 69 | 72 | 73 |
| 5350 | 73 | 62 | 67 | 71 |
| 5470 | 71 | 64 | 68 | 72 |
| 5600 | 67 | 60 | 67 | 71 |
| 5730 | 67 | 57 | 64 | 68 |

| Frequency | A2_5G_6G | A4_5G_6G | A7_5G_6G | A8_5G_6G |
|-----------|----------|----------|----------|----------|
| (MHz) | (%) | (%) | (%) | (%) |
| 5150 | 67 | 58 | 70 | 64 |
| 5250 | 70 | 60 | 71 | 66 |
| 5350 | 72 | 61 | 67 | 65 |
| 5470 | 71 | 61 | 63 | 65 |
| 5600 | 71 | 53 | 59 | 62 |
| 5730 | 72 | 60 | 60 | 57 |
| 5955 | 70 | 58 | 63 | 59 |
| 6175 | 71 | 59 | 58 | 59 |
| 6415 | 73 | 55 | 65 | 57 |