



# ANTENNA DATASHEET

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AOT PN: ANT-HCB4-W14

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## REVISION HISTORY

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REV.	Description	Date
<b>1.0</b>	First release	Feb.18/2025

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└ AOT Wireless Technology Co., Limited ┘

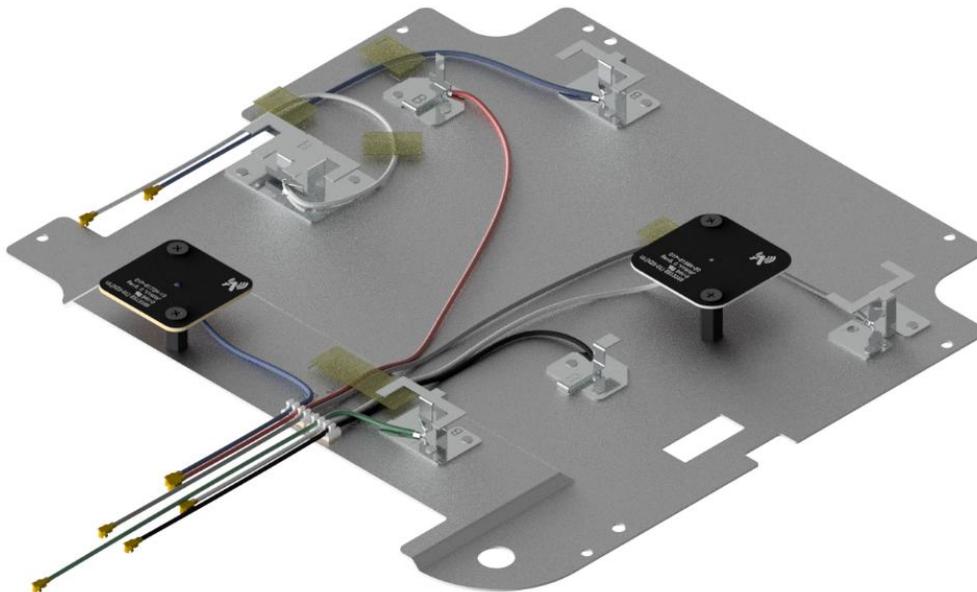


## ANT-HCB4-W14 Antenna

Based on AOT's patented technology, the Model ANT-HCB4-W14 Antenna features provides a high performance, internal 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.

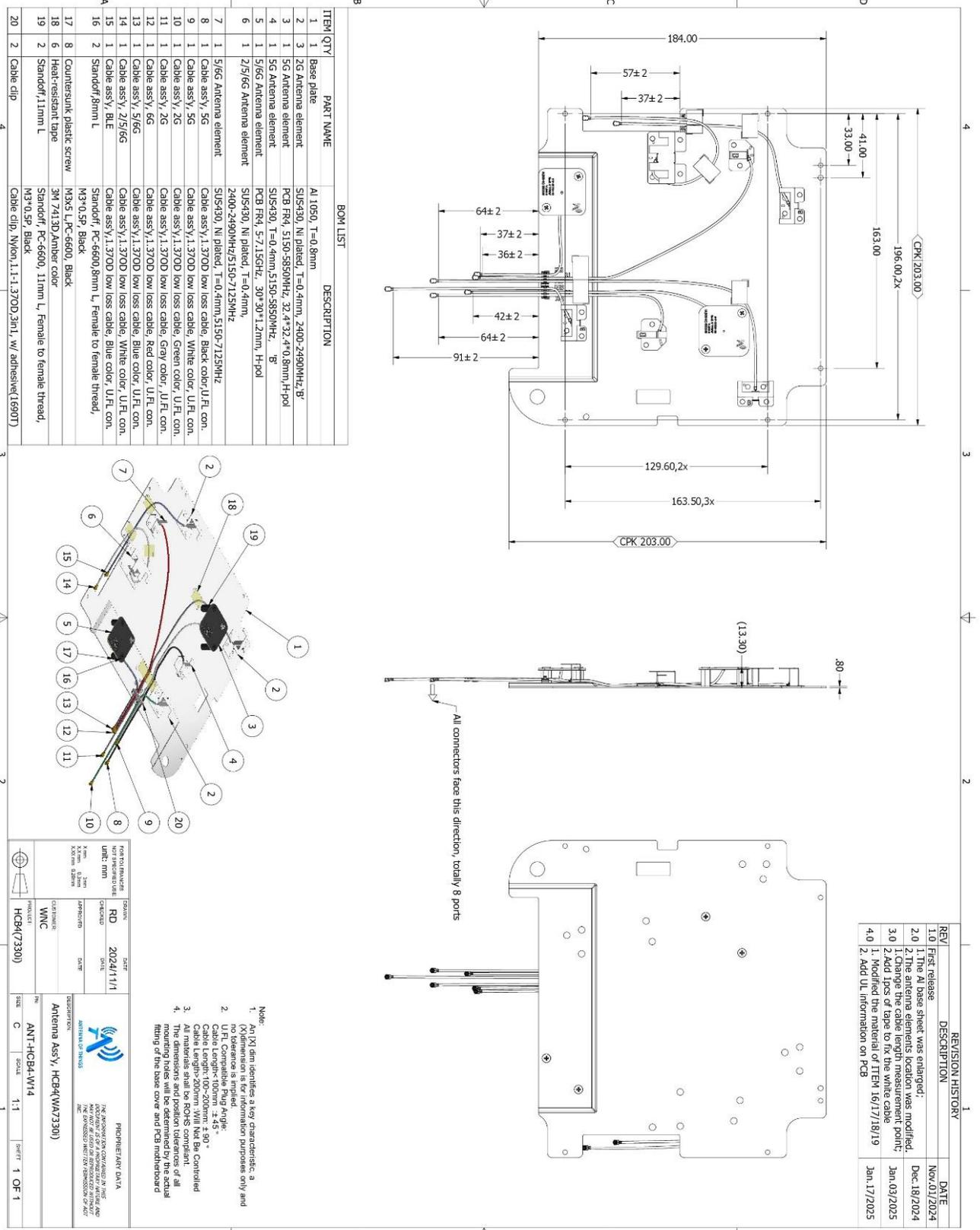
## Features Overview

- Covering 2400-2490MHz/5150-5850MHz/5925-7125MHz frequency
- Off-board, Cable-fed,
- Low Cost, High performance
- RoHS compliant.





# Assembly Drawing





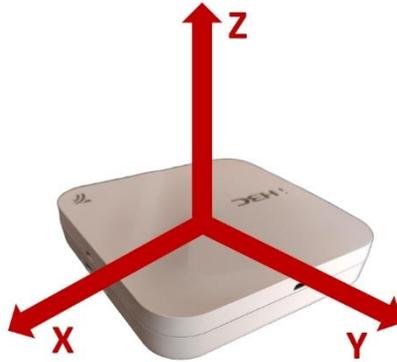
## Specifications and Interface

<b>Wireless Standard</b>	IEEE 802.11 a/b/g/n/ac/ax, WiFi 6E/WiFi 7
<b>Frequency Bands</b>	2400 -2490MHz/5150-5850MHz/5925MHz-7125MHz
<b>Peak Realized Gain</b>	5.6dBi@2.4GHz/6.5dBi@5GHz/7.9dBi@6GHz
<b>Realized Efficiency</b>	>64%@2.4GHz/>59%@5GHz/>60%@6GHz
<b>VSWR</b>	<1.8@2.4GHz/<1.9@5GHz/<1.9@6GHz
<b>Polarization</b>	Linear Polarization
<b>Radiation Pattern</b>	Omni-directional
<b>Feed Impedance</b>	50Ω
<b>Power Handling</b>	30dBm
<b>Antenna Structure</b>	PCB Antenna/Stamped Metal Antenna
<b>Feeding Description</b>	Cable Feeding
<b>Antenna Dimensions</b>	203.0 x 203.0 x 13.3(mm)
<b>Weight</b>	95.5 g
<b>Temperature Range</b>	Operating temperature: -40° C to +75° C (-40° F to +167° F) Storage temperature: -40° C to +85° C (-40° F to +185° F)

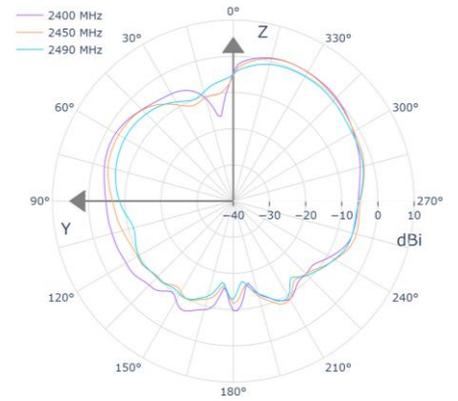
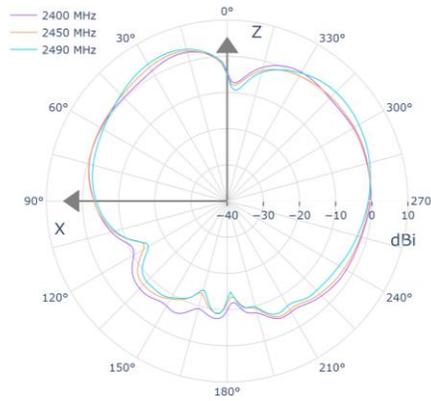
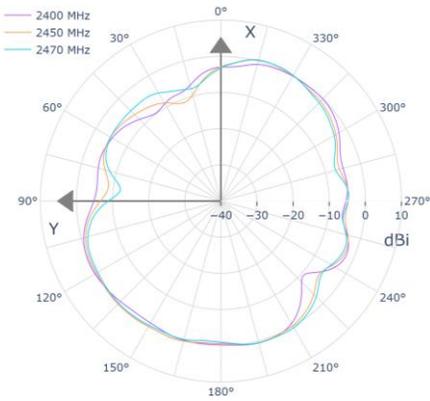


## Radiation Patterns

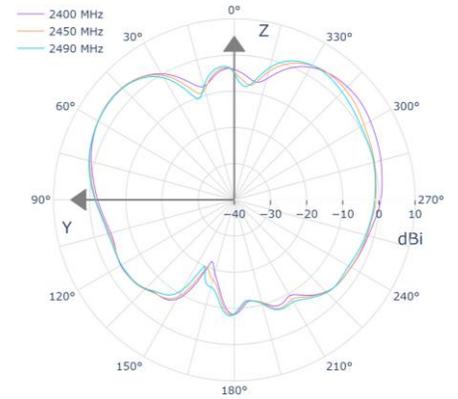
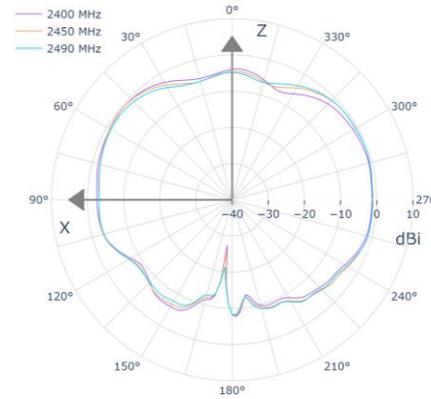
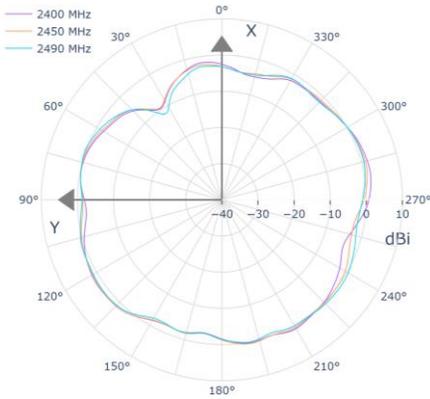
Radiation patterns were taken with the antenna in testing Chamber



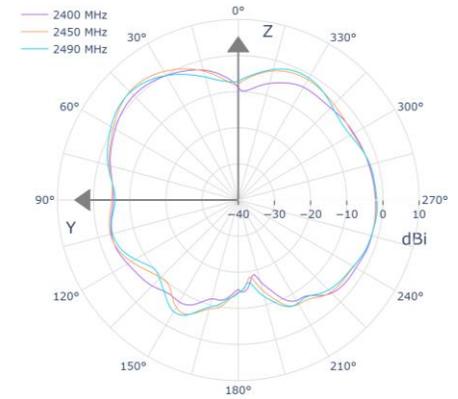
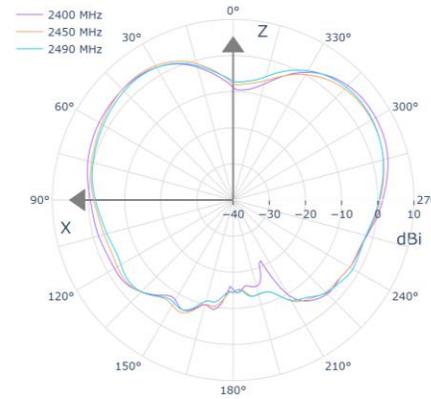
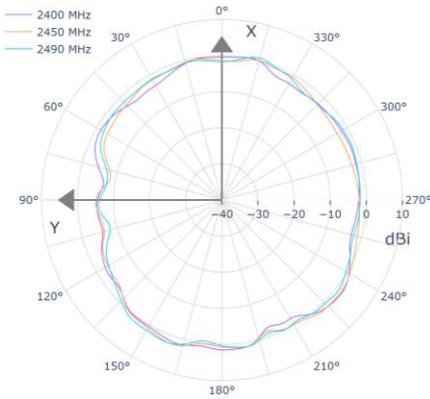
Antenna integrated in customer's housing for radiation pattern



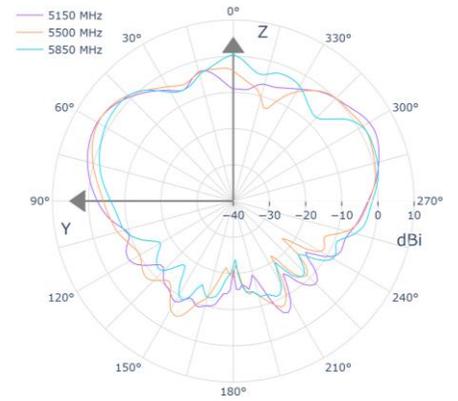
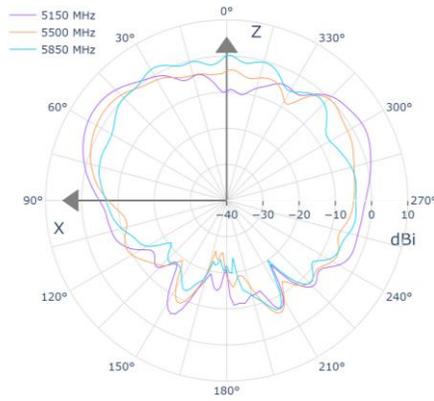
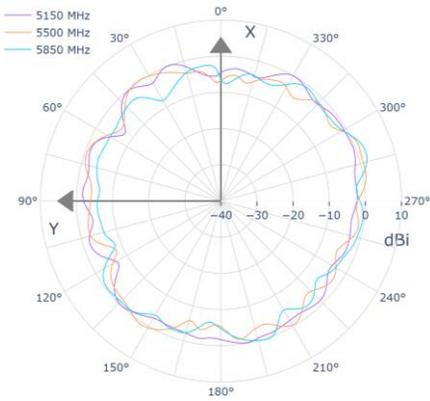
Model ANT-HCB4-W14 Antenna of A1\_2G4 Radiation Patterns at 2G4



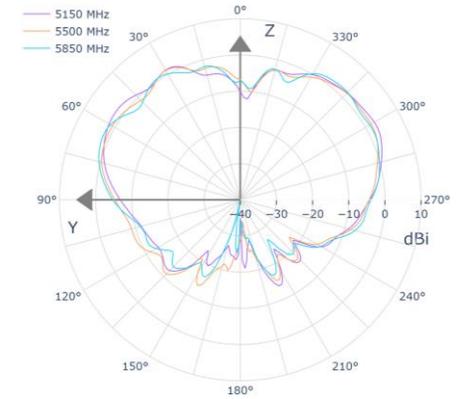
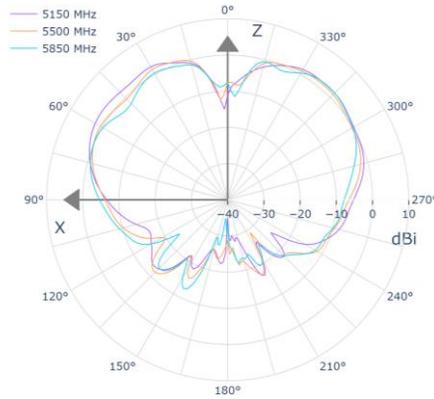
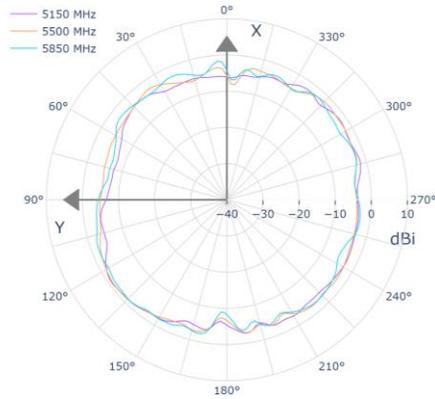
Model ANT-HCB4-W14 Antenna of A3\_2G4 Radiation Patterns at 2G4



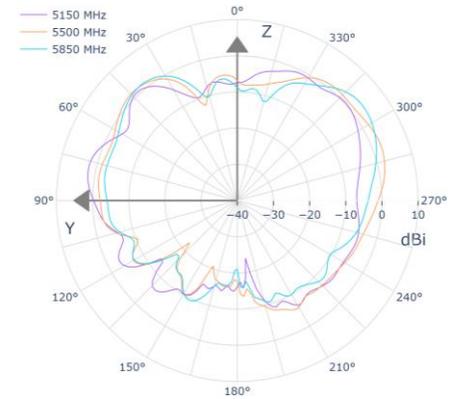
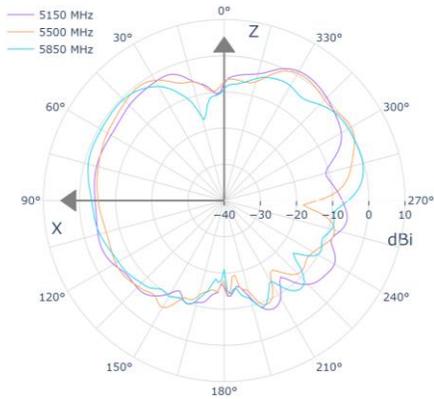
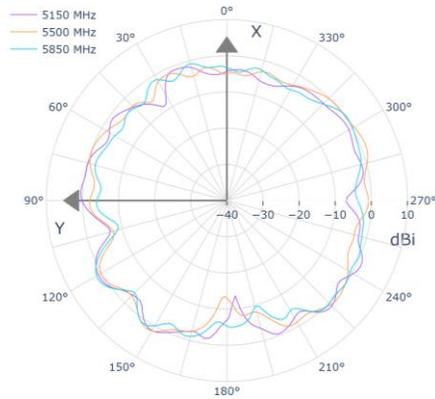
Model ANT-HCB4-W14 Antenna of A5\_BLE Radiation Patterns at BLE



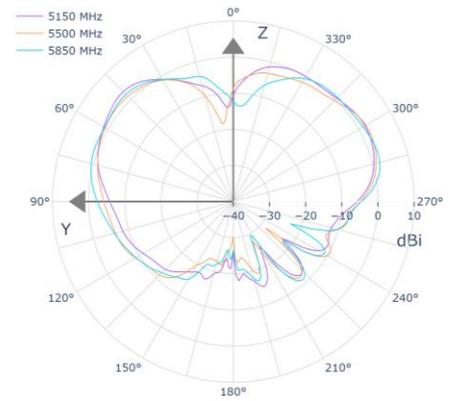
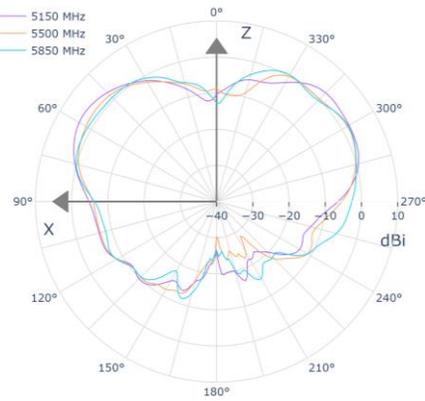
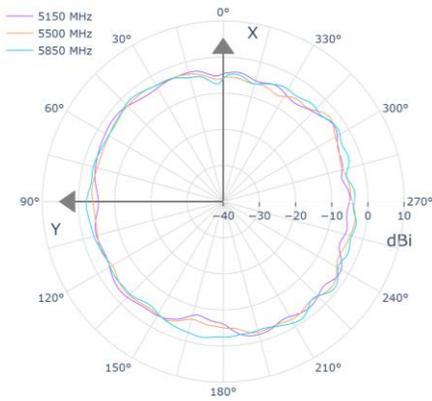
Model ANT-HCB4-W14 Antenna of A2\_5G Radiation Patterns at 5G



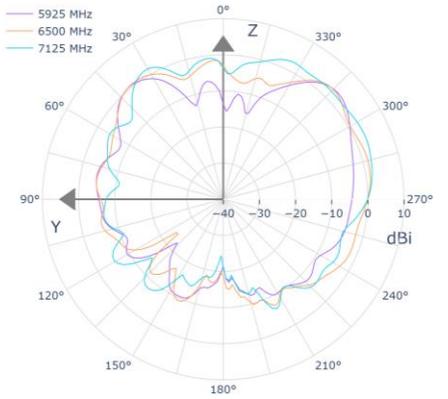
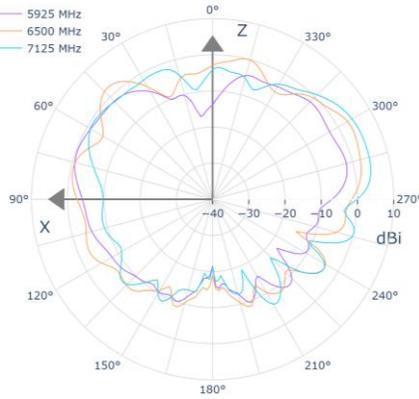
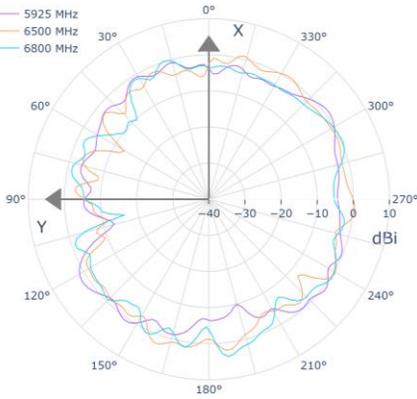
Model ANT-HCB4-W14 Antenna of A4\_5G Radiation Patterns at 5G



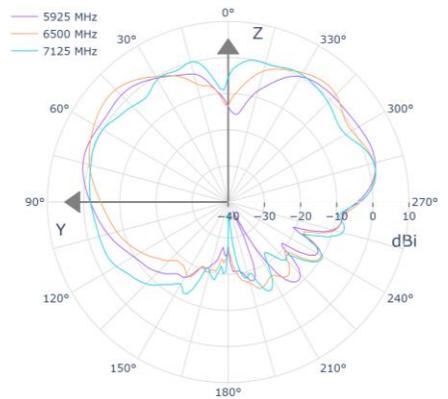
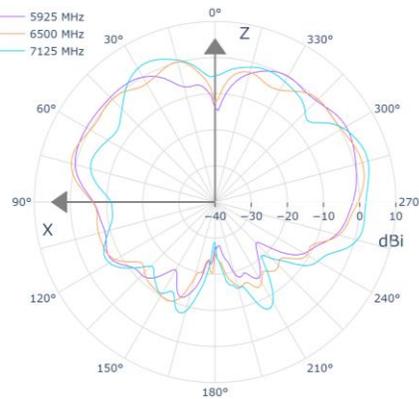
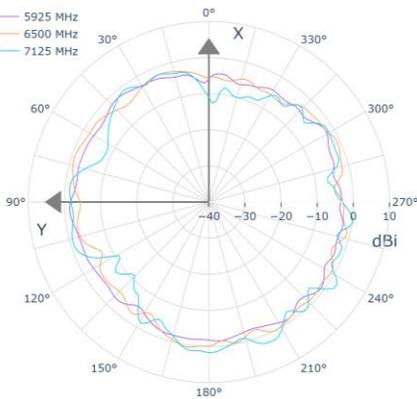
Model ANT-HCB4-W14 Antenna of A6\_5G\_6G Radiation Patterns at 5G



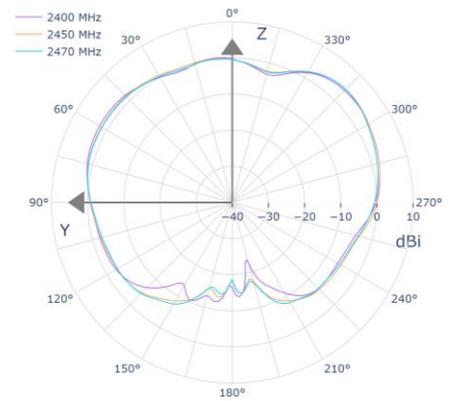
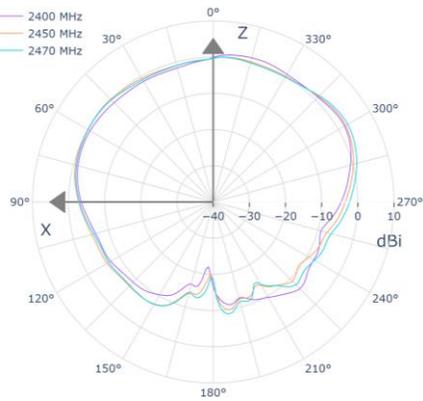
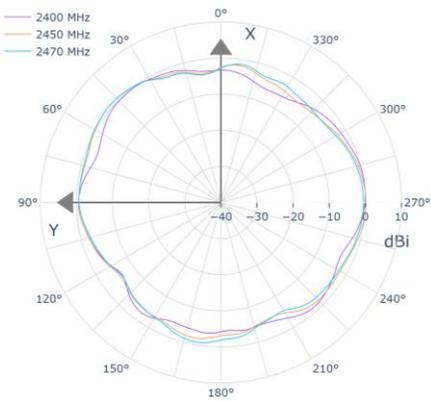
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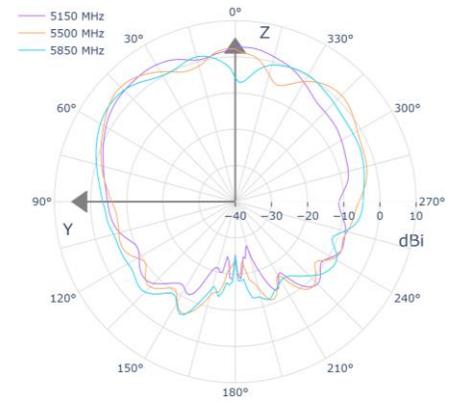
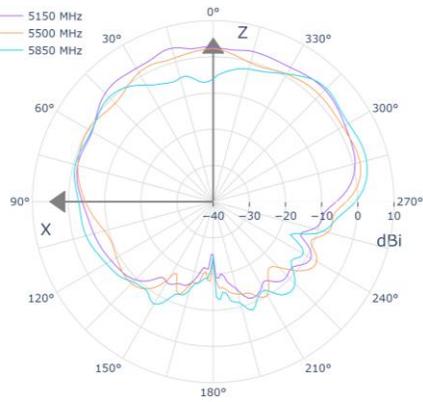
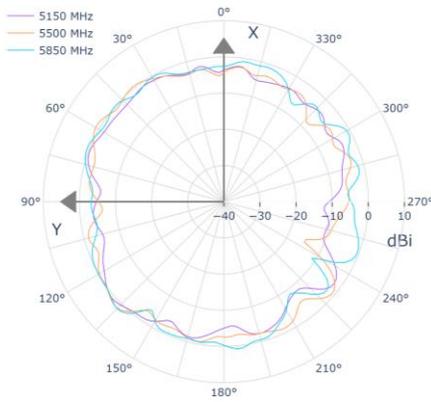
Model ANT-HCB4-W14 Antenna of A6\_5G\_6G Radiation Patterns at 6G



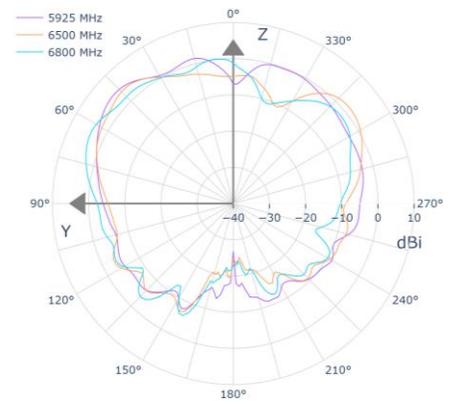
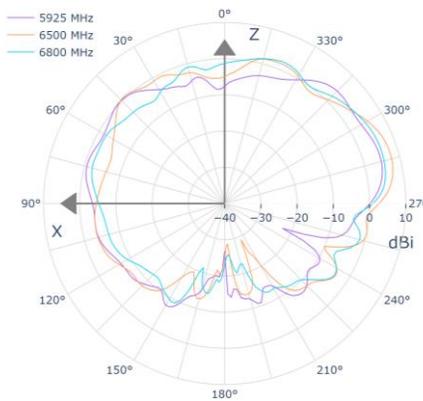
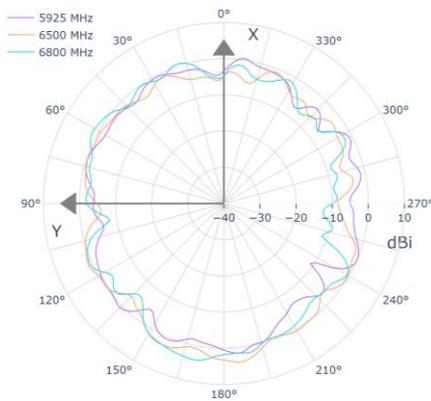
Model ANT-HCB4-W14 Antenna of A7\_5G\_6G Radiation Patterns at 6G



Model ANT-HCB4-W14 Antenna of A8\_Scan Radiation Patterns at 2G



Model ANT-HCB4-W14 Antenna of A8\_Scan Radiation Patterns at 5G



Model ANT-HCB4-W14 Antenna of A8\_Scan Radiation Patterns at 6G



## Realized Efficiency & Peak Realized Gain

Frequency	A1_2G4	A3_2G4	A5_BLE	A8_Scan
(MHz)	(%)	(%)	(%)	(%)
2400	64	73	73	67
2410	65	78	74	69
2420	64	78	74	69
2430	65	78	76	71
2440	64	78	76	71
2450	64	78	78	71
2460	64	78	78	71
2470	64	78	80	71
2480	65	78	80	71
2490	65	77	79	69

Frequency	A1_2G4	A3_2G4	A5_BLE	A8_Scan
(MHz)	(dBi)	(dBi)	(dBi)	(dBi)
2400	4.9	4.5	5.3	4.0
2410	4.9	4.5	5.4	4.2
2420	5.0	4.5	5.3	4.3
2430	5.2	4.5	5.3	4.4
2440	5.3	4.5	5.3	4.4
2450	5.4	4.4	5.3	4.4
2460	5.5	4.4	5.2	4.4
2470	5.5	4.4	5.2	4.4
2480	5.5	4.3	5.1	4.3
2490	5.6	4.2	4.9	4.4



<b>Frequency</b>	<b>A2_5G</b>	<b>A4_5G</b>	<b>A6_5G_6G</b>	<b>A7_5G_6G</b>	<b>A8_Scan</b>
<b>(MHz)</b>	<b>(%)</b>	<b>(%)</b>	<b>(%)</b>	<b>(%)</b>	<b>(%)</b>
<b>5150</b>	69	70	65	65	69
<b>5200</b>	65	67	64	64	67
<b>5300</b>	66	70	66	63	74
<b>5400</b>	59	68	65	65	69
<b>5500</b>	62	67	62	60	69
<b>5600</b>	63	66	62	63	68
<b>5700</b>	60	64	62	63	69
<b>5800</b>	61	62	64	66	70
<b>5850</b>	62	63	63	64	69

<b>Frequency</b>	<b>A2_5G</b>	<b>A4_5G</b>	<b>A6_5G_6G</b>	<b>A7_5G_6G</b>	<b>A8_Scan</b>
<b>(MHz)</b>	<b>(dBi)</b>	<b>(dBi)</b>	<b>(dBi)</b>	<b>(dBi)</b>	<b>(dBi)</b>
<b>5150</b>	6.0	4.9	6.0	4.5	4.9
<b>5200</b>	6.2	4.8	6.2	4.2	5.1
<b>5300</b>	6.1	4.6	6.4	4.5	5.1
<b>5400</b>	6.3	4.6	6.0	4.1	5.9
<b>5500</b>	6.2	5.0	6.3	4.3	6.7
<b>5600</b>	6.3	4.3	6.2	4.5	6.6
<b>5700</b>	6.5	4.1	6.1	4.6	6.1
<b>5800</b>	5.8	3.9	6.2	4.5	5.5
<b>5850</b>	6.0	3.8	5.9	4.5	4.9



<b>Frequency</b>	<b>A6_5G_6G</b>	<b>A7_5G_6G</b>	<b>A8_Scan</b>
<b>(MHz)</b>	<b>(%)</b>	<b>(%)</b>	<b>(%)</b>
<b>5925</b>	62	65	67
<b>6000</b>	61	64	64
<b>6100</b>	67	65	66
<b>6200</b>	69	63	66
<b>6300</b>	68	64	70
<b>6400</b>	67	62	72
<b>6500</b>	70	63	73
<b>6600</b>	68	60	72
<b>6700</b>	66	62	70
<b>6800</b>	68	62	67
<b>6900</b>	68	63	66
<b>7000</b>	68	62	66
<b>7100</b>	67	63	67
<b>7125</b>	65	66	64

<b>Frequency</b>	<b>A6_5G_6G</b>	<b>A7_5G_6G</b>	<b>A8_Scan</b>
<b>(MHz)</b>	<b>(dBi)</b>	<b>(dBi)</b>	<b>(dBi)</b>
<b>5925</b>	6.7	4.6	5.6
<b>6000</b>	6.5	4.4	5.5
<b>6100</b>	6.0	4.6	6.7
<b>6200</b>	6.2	4.5	6.9
<b>6300</b>	6.1	4.5	7.3
<b>6400</b>	6.0	4.2	7.4
<b>6500</b>	6.5	4.3	7.7
<b>6600</b>	5.9	4.4	7.6
<b>6700</b>	5.9	4.6	7.9
<b>6800</b>	6.7	5.7	7.8
<b>6900</b>	6.2	5.3	7.7
<b>7000</b>	6.4	5.2	7.8
<b>7100</b>	6.3	5.7	5.6
<b>7125</b>	6.2	5.6	5.5