

Tomcat UX-7C Certification Document

Mar, 2025

Shian Chuang

Antenna Design Department

Outline

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- Test Setup & Procedure
- Test Equipment & Calibration
- Antenna Structure & Placement
- Radiation Pattern
- Peak Gain & Efficiency
- Directional Gain Calculation
- Raw Data

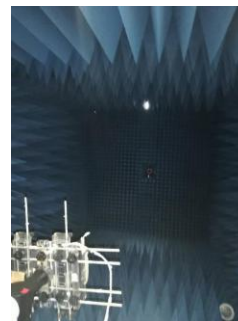
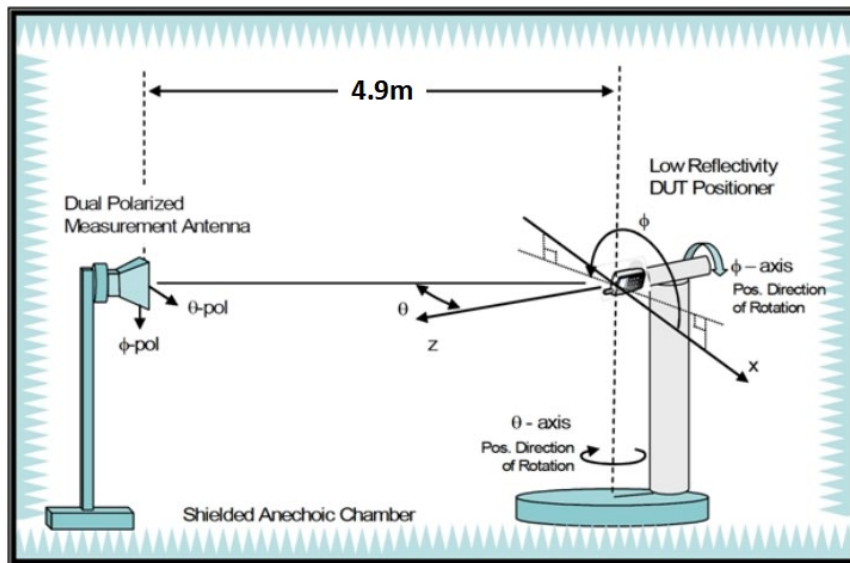


Test Information

Item	Description
Brand Name	HPE Aruba
Equipment	UX-7C
Test Location	8F, No. 3-1, YuanQu St. Taipei, Taiwan 115 R.O.C.
Test Condition	Radiation
Test Engineer	Shian Chuang
Test Environment	ETS-Lindgren AMS-8500 Antenna Measurement Chamber
Test Date	Mar. 10, 2025 ~ Mar. 23, 2025

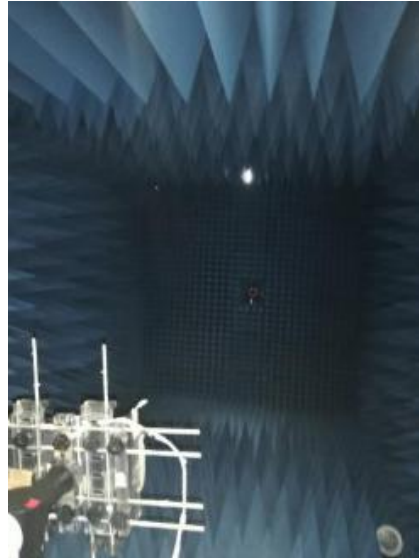
Test Configuration

ETS-Lindgren AMS-8500 antenna measurement system with a size of $7.32(L) \times 3.66(W) \times 3.66(H)$ m³ is used for antenna performance test, which is based on the great-circle test method defined by CTIA. The multi-axis positioning system (MAPS) rotates the DUT around two orthogonal axes for full spherical coverage.



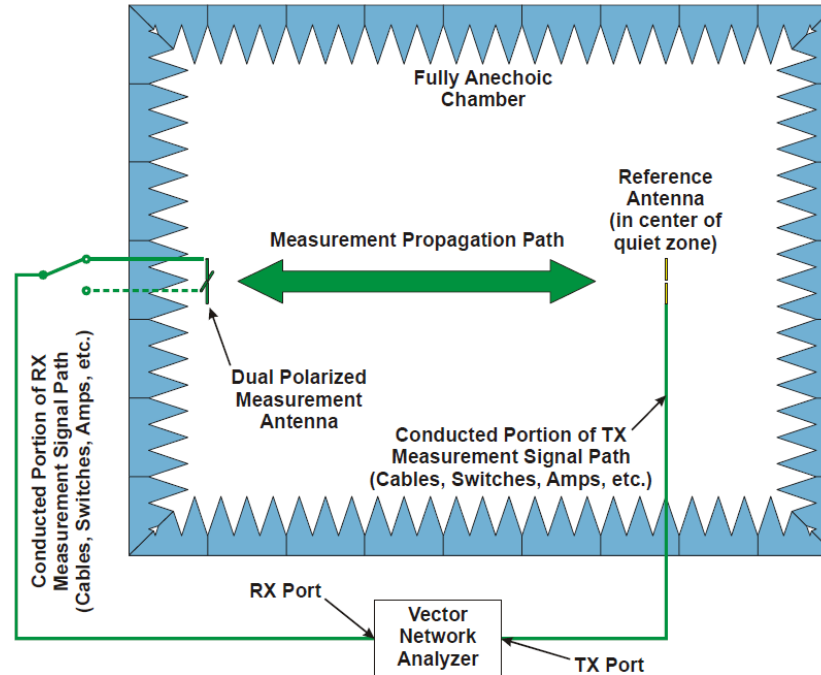
Test Setup & Procedure

1. Fix the DUT on the dielectric support structure and connect the feeding cable to the antenna used for test
2. Set measurement parameters such as frequency range and sampling angle
3. Perform test and then get far-field data (radiation pattern, gain, efficiency)
4. Repeat test procedure for other antennas



Test Equipment & Calibration

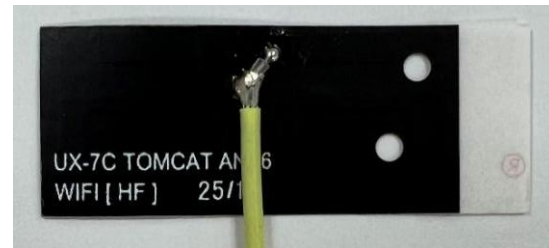
Network analyzer and reference antennas are used for calibration. Path loss and cable loss for different frequency bands can be checked and calculated.



Test Equipment & Calibration

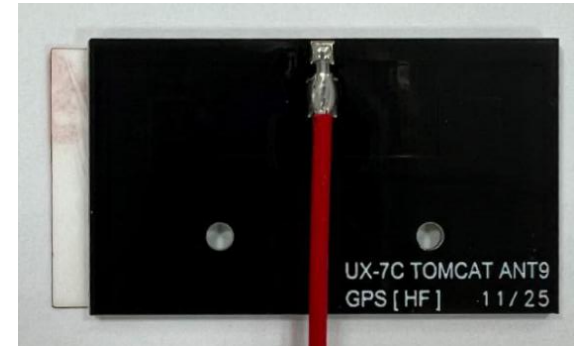
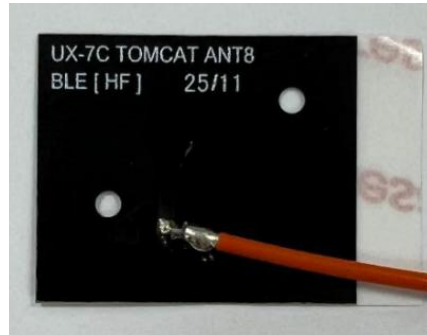
Instrument	Brand	Characteristics	Model No.	Serial No.	Calibration Due Date
Precision Sleeve Dipole	ETS-Lindgren	600 MHz ~ 800 MHz	3126-700	00169715	May 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	800 MHz ~ 1000 MHz	3126-900	00169592	May 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	1400 MHz ~ 1700 MHz	3126-1550	00164599	May 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	1700 MHz ~ 2000 MHz	3126-1850	00169588	May 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	2000 MHz ~ 2300 MHz	3126-2150	00169593	May 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	2300 MHz ~ 2700 MHz	3126-2500	00169597	May 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	3000 MHz ~ 4000 MHz	3126-3500	00239652	Aug. 23, 2025
Precision Sleeve Dipole	ETS-Lindgren	4000 MHz ~ 5000 MHz	3126-4500	00239796	Aug. 23, 2025
Precision Sleeve Dipole	ETS-Lindgren	5000 MHz ~ 6000 MHz	3126-5500	00169728	May 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	6000 MHz ~ 7200 MHz	3126-6500	00235488	Aug. 23, 2025
Double Ridged Horn Antenna	SCHWARZBECK	1 GHz ~ 18 GHz	BBHA 9120D	BBHA 9120D-1294	Oct. 7, 2025
EMQuest Antenna Measurement Software	ETS-Lindgren	Control chamber system	EMQ-100	1437	Non-Calibration Required

Antenna Structure & Placement



Ant No.	Operating Band	Type	Material	Feeding	Size
ANT1 (Main)	LTE (617-2690MHz)	Monopole	FPC	Cable	80(L) x 50(W) x 0.2(T) mm ³
ANT2 (Div)	LTE (729-2690MHz)	PIFA	FPC	Cable	80(L) x 50(W) x 0.2(T) mm ³
ANT3	WiFi 2.4G/5G/6G	Dipole	FPC	Cable	30(L) x 13(W) x 0.2(T) mm ³
ANT4	WiFi 2.4G/5G/6G	Dipole	FPC	Cable	30(L) x 13(W) x 0.2(T) mm ³
ANT5	Scanning 2.4G/5G/6G	Dipole	FPC	Cable	30(L) x 13(W) x 0.2(T) mm ³
ANT6	Scanning 2.4G/5G/6G	Dipole	FPC	Cable	30(L) x 13(W) x 0.2(T) mm ³

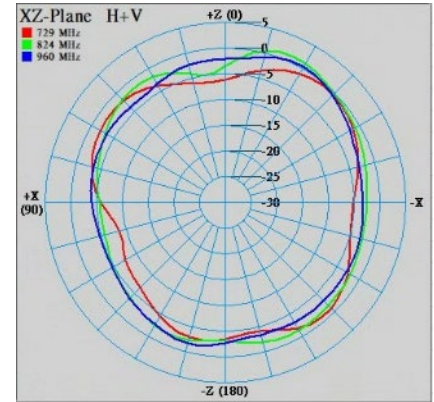
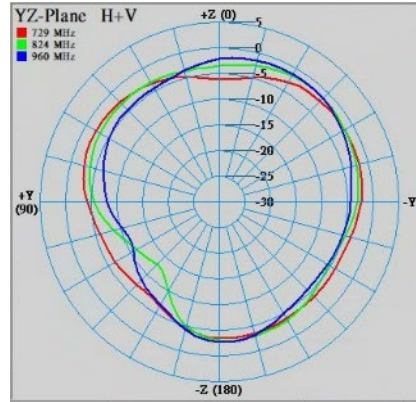
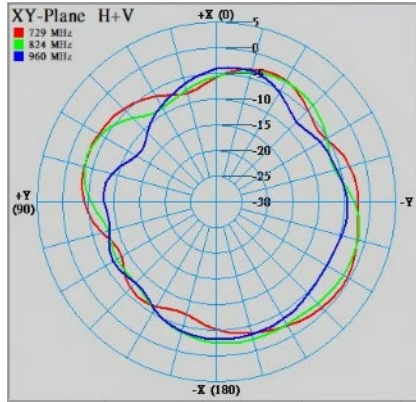
Antenna Structure & Placement



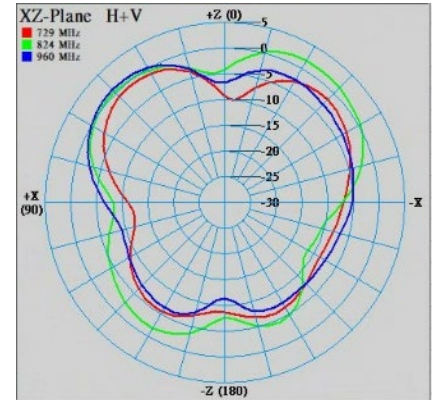
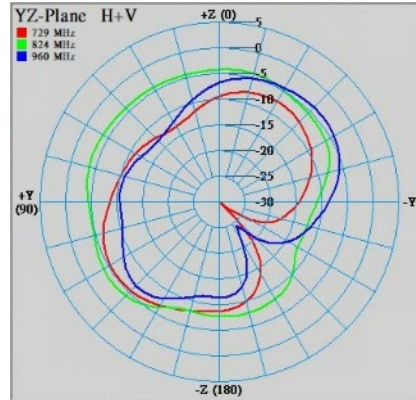
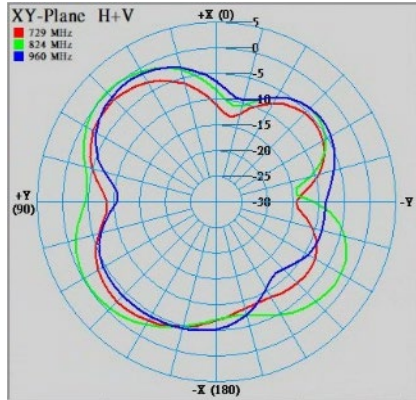
Ant No.	Operating Band	Type	Material	Feeding	Size
ANT7	BLE	Dipole	FPC	Cable	24(L) x 16(W) x 0.2(T) mm ³
ANT8	BLE	Dipole	FPC	Cable	25(L) x 20(W) x 0.2(T) mm ³
ANT9	GPS L1	Dipole	FPC	Cable	35(L) x 20(W) x 1(T) mm ³

Radiation Pattern @LTE LB

Ant1

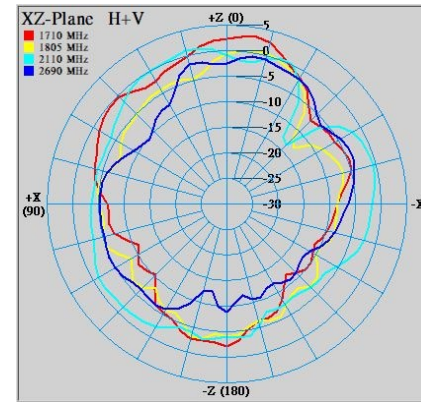
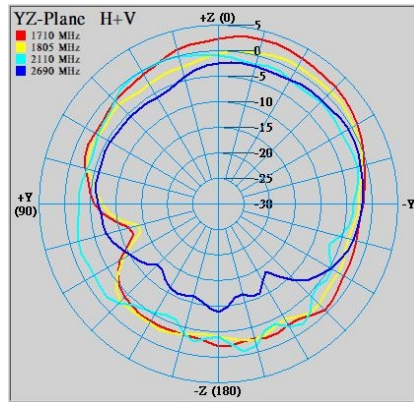
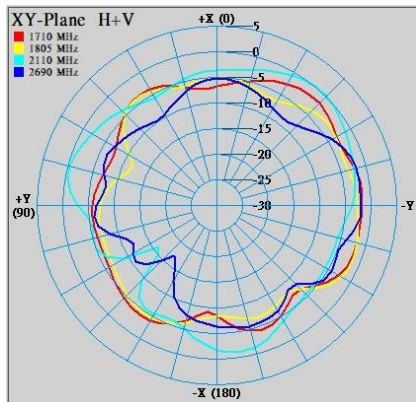


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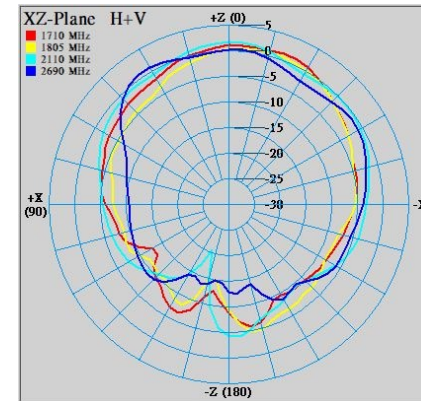
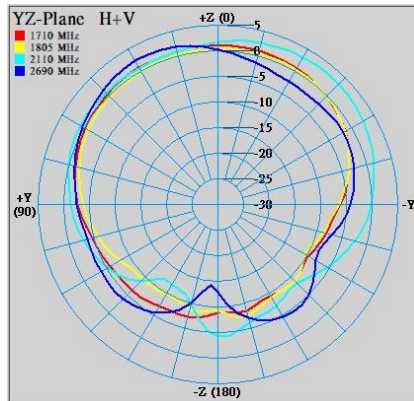
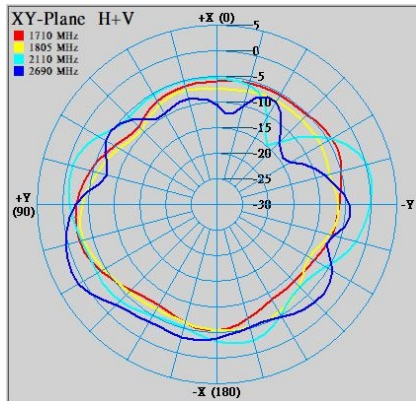


Radiation Pattern @LTE MB

Ant1

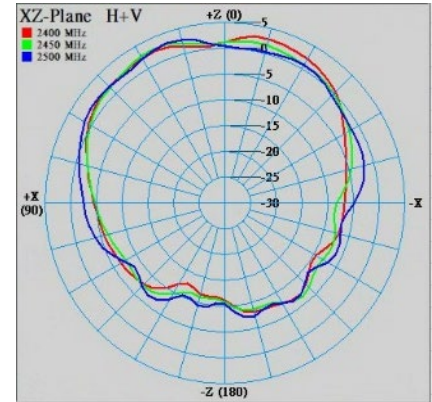
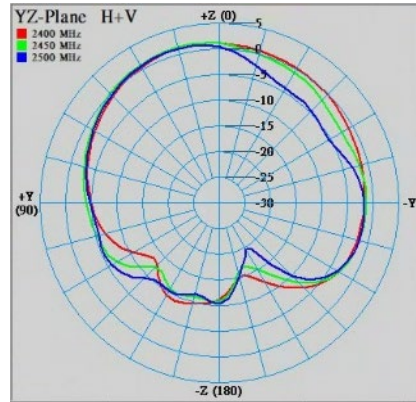
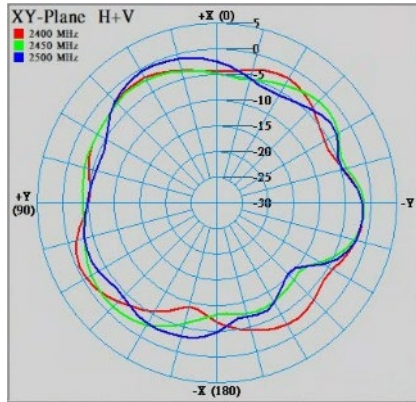


Ant2

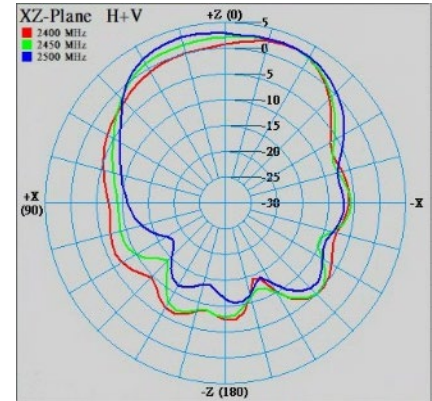
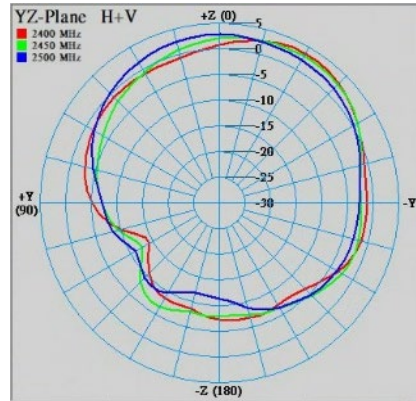
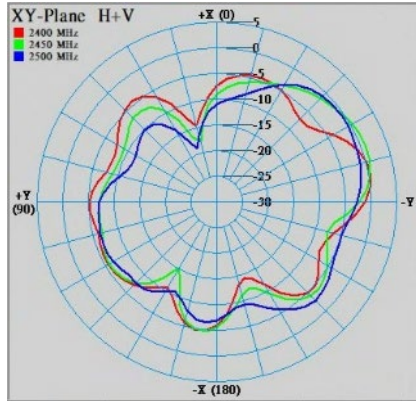


Radiation Pattern @WiFi 2.4GHz

Ant3

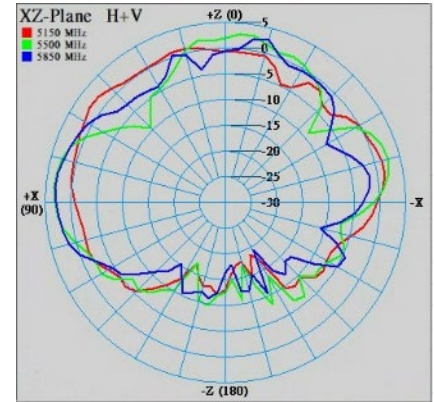
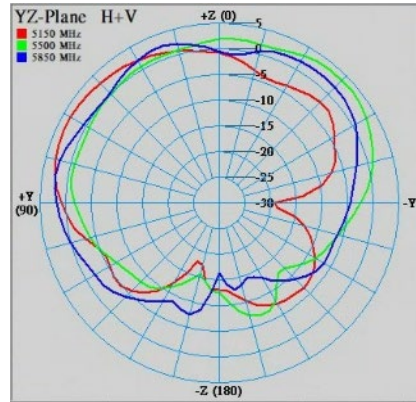
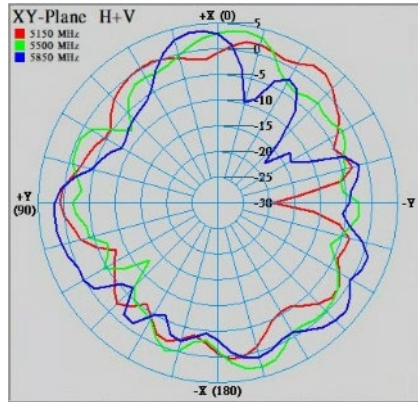


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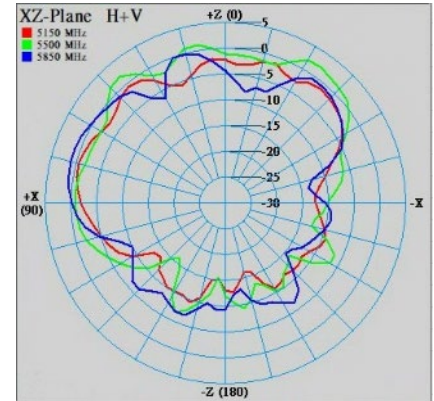
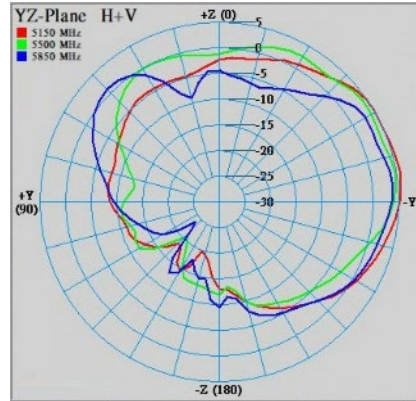
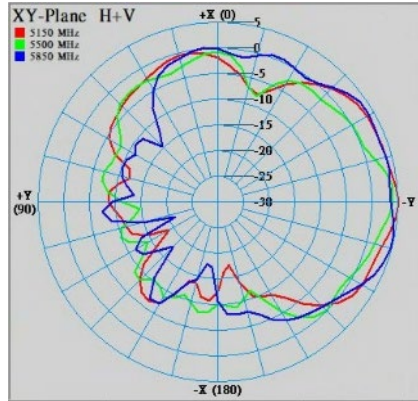


Radiation Pattern @WiFi 5GHz

Ant3

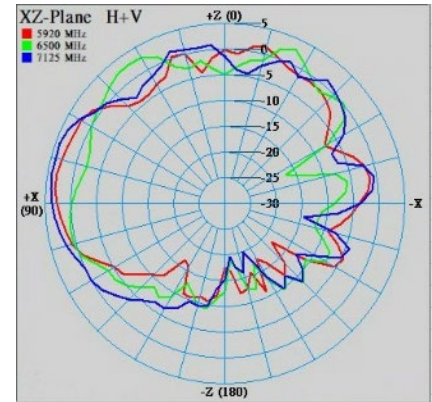
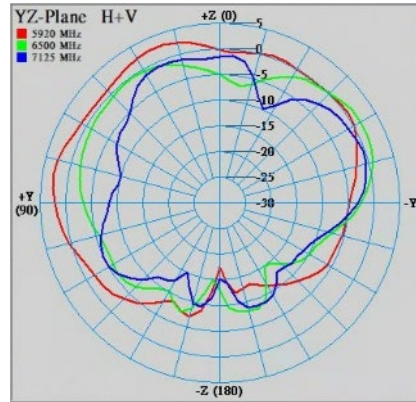
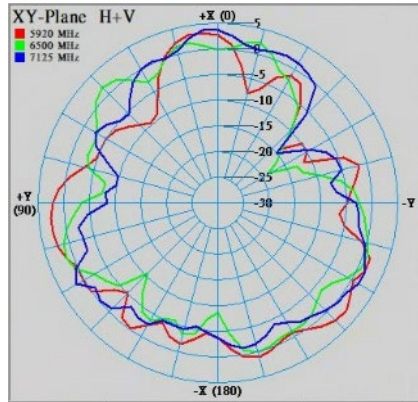


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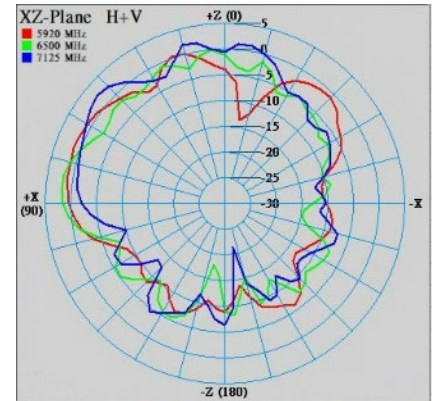
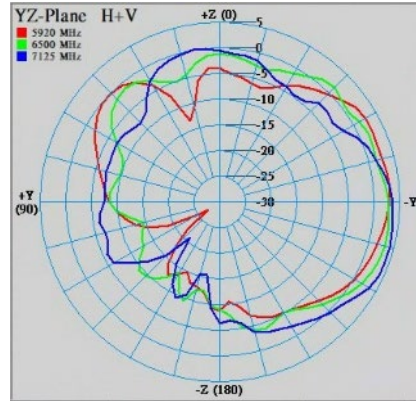
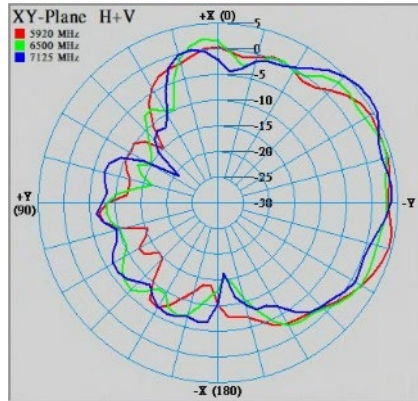


Radiation Pattern @WiFi 6GHz

Ant3

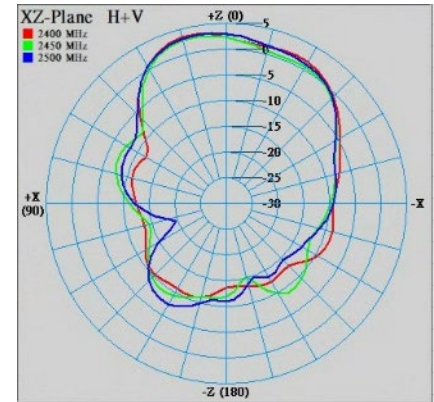
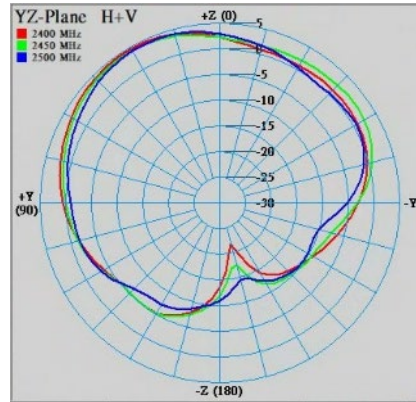
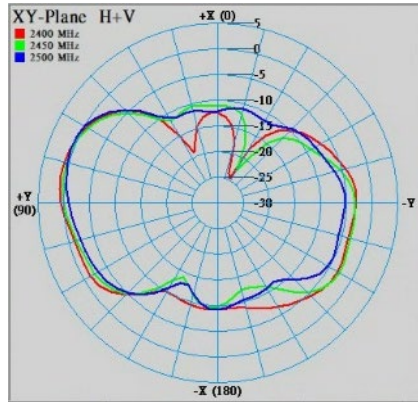


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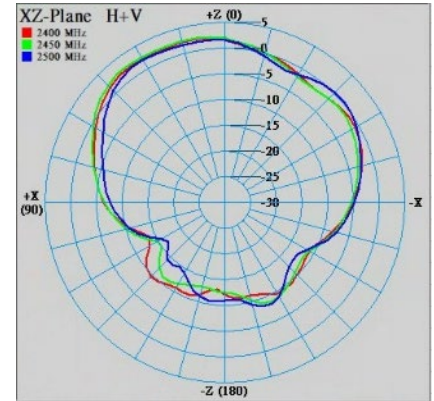
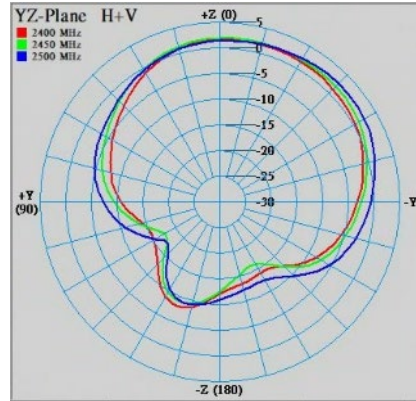
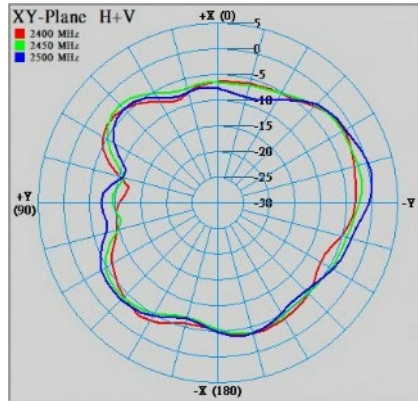


Radiation Pattern @Scan 2.4GHz

Ant5

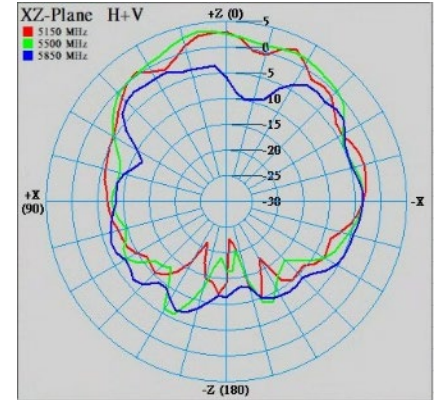
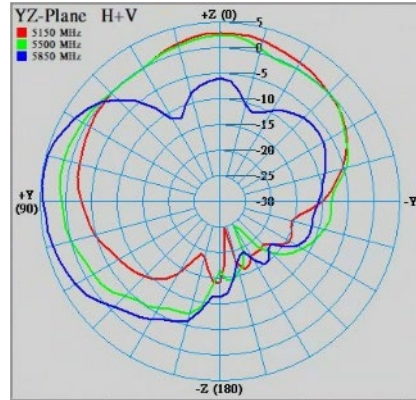
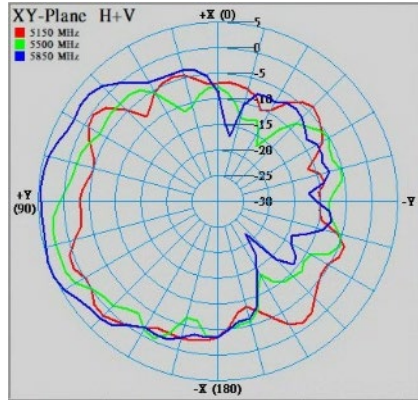


Ant6

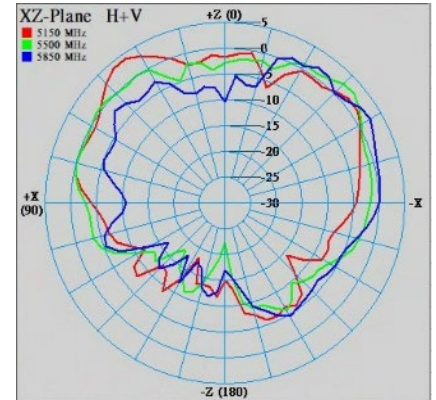
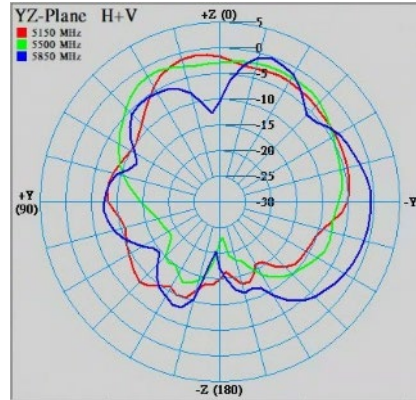
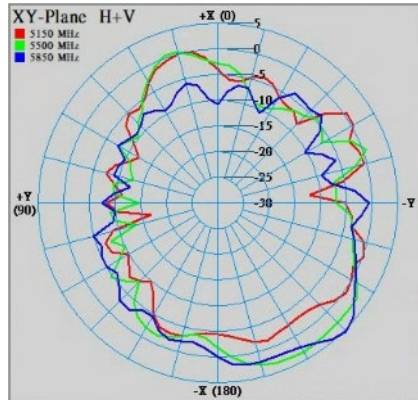


Radiation Pattern @Scan 5GHz

Ant5

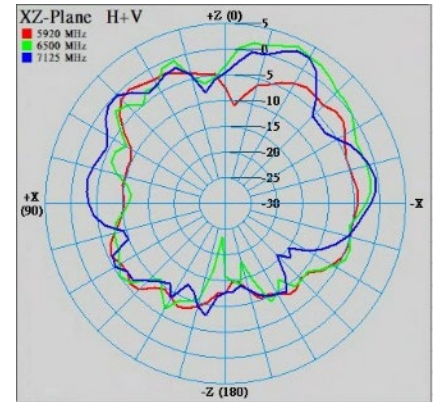
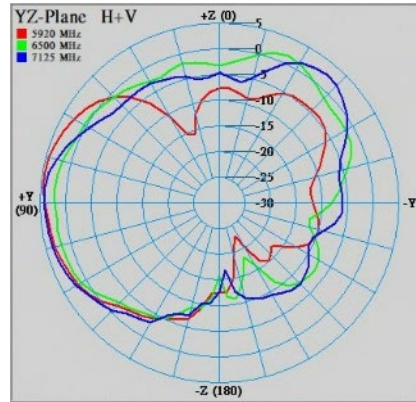
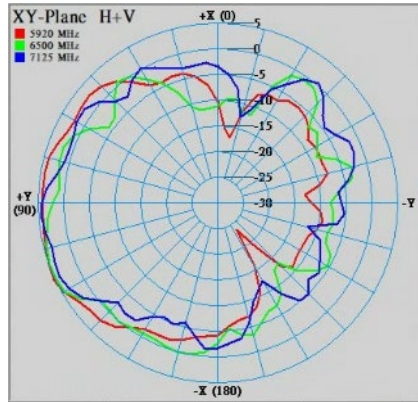


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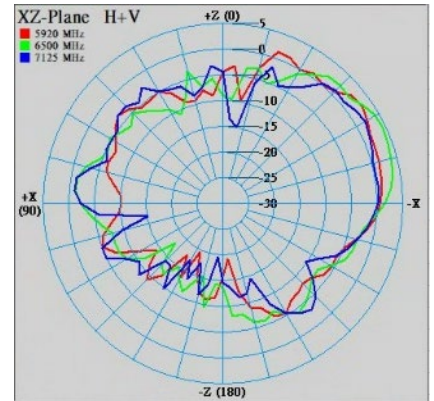
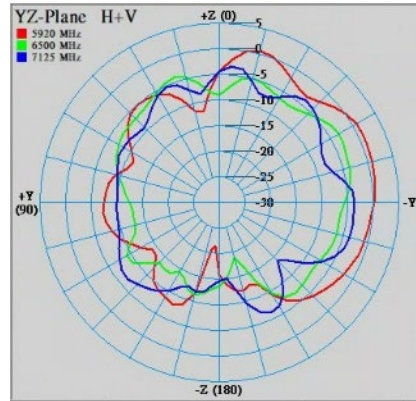
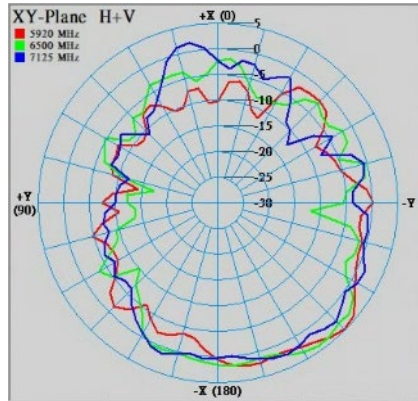


Radiation Pattern @Scan 6GHz

Ant5

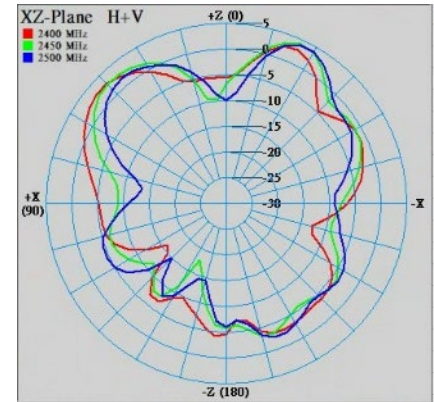
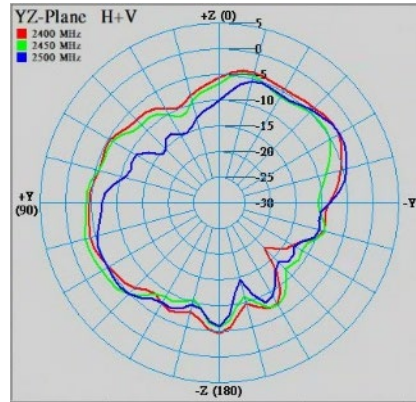
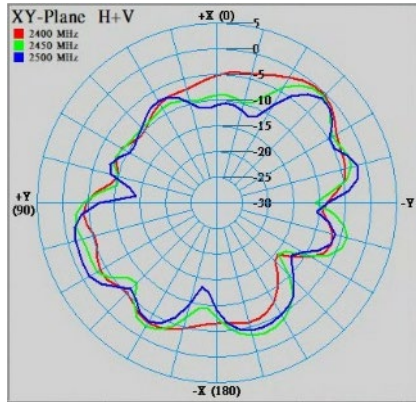


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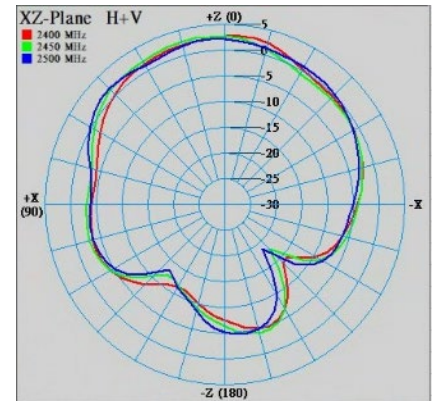
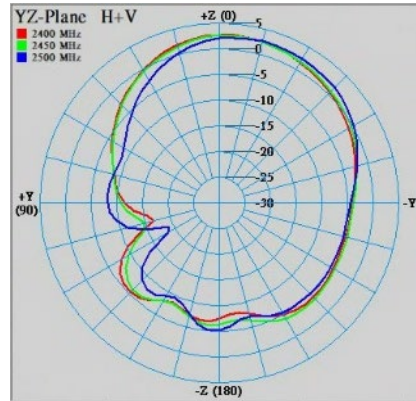
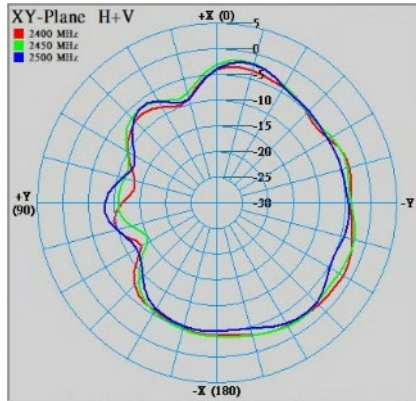


Radiation Pattern @BLE 2.4GHz

Ant7

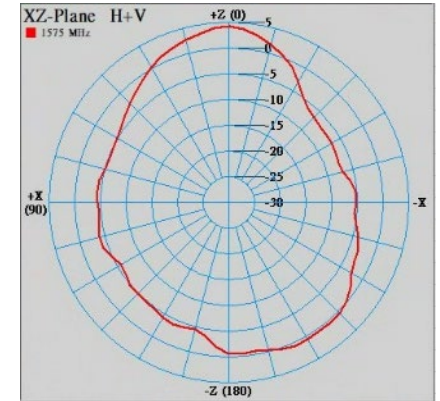
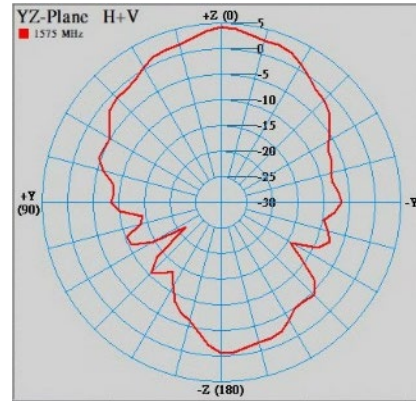
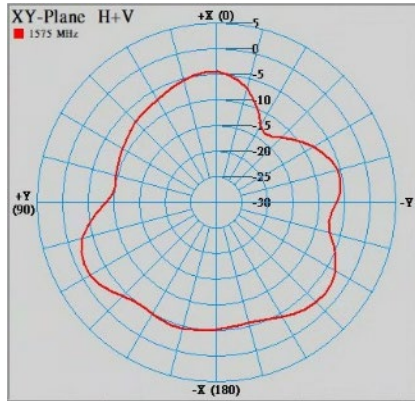


Ant8



Radiation Pattern @GPS 1.575GHz

Ant9



Peak Gain & Efficiency

Ant 1		
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
729	0.5	46
824	1.3	50
960	0.5	40
1710	3.4	63
1805	1.2	52
2110	2.1	52
2690	-0.5	58

Ant 2		
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
729	-0.6	37
824	1.8	57
960	1.0	39
1710	1.5	41
1805	1.0	44
2110	3.3	56
2690	2.4	51

Peak Gain & Efficiency

Ant 3		
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	3.2	61
2450	3.0	66
2500	3.0	60
5150	4.3	66
5500	5.1	69
5850	4.4	71
5920	4.2	70
6500	4.5	66
7125	5.0	65

Ant 4		
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	3.6	61
2450	3.3	67
2500	3.2	60
5150	5.6	67
5500	5.2	69
5850	5.0	72
5920	4.6	72
6500	4.5	68
7125	5.8	66

Peak Gain & Efficiency

Ant 5		
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	5.1	60
2450	4.4	64
2500	4.3	61
5150	5.6	60
5500	5.7	62
5850	5.7	62
5920	5.9	66
6500	5.7	71
7125	4.7	68

Ant 6		
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	2.7	58
2450	2.7	63
2500	3.3	59
5150	4.2	58
5500	4.6	61
5850	5.8	65
5920	5.6	66
6500	4.8	61
7125	3.4	60

Peak Gain & Efficiency

Ant 7		
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	3.2	50
2450	4.1	58
2500	4.2	54

Ant 8		
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	3.1	55
2450	3.0	59
2500	2.6	57

Peak Gain & Efficiency

Ant 9		
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
1575	4.2	42
1595	4.1	44
1602	3.8	44

Directional Gain Calculation (1/4)

Because the antennas are fixed in location within the device the directional antenna gain for MIMO is calculated over a sphere using the raw spatial data taken at 5 degree steps of theta and phi for each antenna using the equations from KDB 662911 D01. The raw antenna data is located in the appendix of this report.

The uncorrelated antenna gain was calculated using KDB 662911 D01, F(2)(d)(ii)

The uncorrelated gain was calculated for each point in the spatial data, and the highest value reported.

2.4GHz uncorrelated calculation:

2400MHz

Maximum uncorrelated gain: 1.49dBi

$$= 10^* \text{LOG}((10^{(G0/10)} + 10^{(G1/10)})/2)$$

$$= 10^* \text{LOG}((10^{(3.840/10)} + 10^{(-3.979/10)})/2)$$

This occurs at: 2400MHz, phi 335/theta 75;

2450MHz

Maximum uncorrelated gain: 1.80dBi

$$= 10^* \text{LOG}((10^{(G0/10)} + 10^{(G1/10)})/2)$$

$$= 10^* \text{LOG}((10^{(1.350/10)} + 10^{(2.206/10)})/2)$$

2450MHz, phi 160/theta 15;

2500MHz

Maximum uncorrelated gain: 1.54dBi

$$= 10^* \text{LOG}((10^{(G0/10)} + 10^{(G1/10)})/2)$$

$$= 10^* \text{LOG}((10^{(0.685/10)} + 10^{(2.248/10)})/2)$$

2500MHz, phi 345/theta 20

5GHz uncorrelated calculation:

5150MHz

Maximum uncorrelated gain: 2.51dBi

$$= 10^* \text{LOG}((10^{(G0/10)} + 10^{(G1/10)})/2)$$

$$= 10^* \text{LOG}((10^{(-13.436/10)} + 10^{(5.460/10)})/2)$$

This occurs at: 5150MHz, phi 270/theta 80;

5500MHz

Maximum uncorrelated gain: 1.95dBi

$$= 10^* \text{LOG}((10^{(G0/10)} + 10^{(G1/10)})/2)$$

$$= 10^* \text{LOG}((10^{(-19.592/10)} + 10^{(4.946/10)})/2)$$

5500MHz, phi 275/theta 80;

5600MHz

Maximum uncorrelated gain: 2.33dBi

$$= 10^* \text{LOG}((10^{(G0/10)} + 10^{(G1/10)})/2)$$

$$= 10^* \text{LOG}((10^{(-5.882/10)} + 10^{(5.004/10)})/2)$$

5600MHz, phi 280/theta 55

5785MHz

Maximum uncorrelated gain: 2.11dBi

$$= 10^* \text{LOG}((10^{(G0/10)} + 10^{(G1/10)})/2)$$

$$= 10^* \text{LOG}((10^{(-18.636/10)} + 10^{(5.106/10)})/2)$$

This occurs at: 5785MHz, phi 255/theta 85;

5850MHz

Maximum uncorrelated gain: 1.69dBi

$$= 10^* \text{LOG}((10^{(G0/10)} + 10^{(G1/10)})/2)$$

$$= 10^* \text{LOG}((10^{(3.762/10)} + 10^{(-2.415/10)})/2)$$

5850MHz, phi 210/theta 50

Directional Gain Calculation (2/4)

Because the antennas are fixed in location within the device the directional antenna gain for MIMO is calculated over a sphere using the raw spatial data taken at 5 degree steps of theta and phi for each antenna using the equations from KDB 662911 D01. The raw antenna data is located in the appendix of this report.

The uncorrelated antenna gain was calculated using KDB 662911 D01, F(2)(d)(ii)

The uncorrelated gain was calculated for each point in the spatial data, and the highest value reported.

6GHz uncorrelated calculation:

5920MHz

Maximum uncorrelated gain: 2.07dBi

$$= 10 * \text{LOG}((10^{(G0/10)} + 10^{(G1/10)})/2)$$

$$= 10 * \text{LOG}((10^{(2.968/10)} + 10^{(0.938/10)})/2)$$

This occurs at: 5920MHz, phi 245/theta 75;

6500MHz

Maximum uncorrelated gain: 1.81dBi

$$= 10 * \text{LOG}((10^{(G0/10)} + 10^{(G1/10)})/2)$$

$$= 10 * \text{LOG}((10^{(-3.303/10)} + 10^{(4.095/10)})/2)$$

6500MHz, phi 290/theta 60;

7125MHz

Maximum uncorrelated gain: 2.98dBi

$$= 10 * \text{LOG}((10^{(G0/10)} + 10^{(G1/10)})/2)$$

$$= 10 * \text{LOG}((10^{(-15.699/10)} + 10^{(5.964/10)})/2)$$

7125MHz, phi 305/theta 85

Directional Gain Calculation (3/4)

Because the antennas are fixed in location within the device the directional antenna gain for MIMO is calculated over a sphere using the raw spatial data taken at 5 degree steps of theta and phi for each antenna using the equations from KDB 662911 D01. The raw antenna data is located in the appendix of this report.

The correlated antenna gain was calculated using KDB 662911 D01, $F(2)(d)(i)$

The correlated gain was calculated for each point in the spatial data, and the highest value reported.

2.4GHz correlated calculation:

2400MHz

Maximum correlated gain: 4.00dBi

$$= 10 * \text{LOG}(((10^{(G0/20)} + 10^{(G1/20)})^2)/2)$$

$$= 10 * \text{LOG}(((10^{(1.615/20)} + 10^{(0.310/20)})^2)/2)$$

This occurs at: 2400MHz, phi 155/theta 15;

2450MHz

Maximum correlated gain: 4.80dBi

$$= 10 * \text{LOG}(((10^{(G0/20)} + 10^{(G1/20)})^2)/2)$$

$$= 10 * \text{LOG}(((10^{(1.350/20)} + 10^{(2.206/20)})^2)/2)$$

2450MHz, phi 160/theta 15;

2500MHz

Maximum correlated gain: 4.52dBi

$$= 10 * \text{LOG}(((10^{(G0/20)} + 10^{(G1/20)})^2)/2)$$

$$= 10 * \text{LOG}(((10^{(1.326/20)} + 10^{(1.696/20)})^2)/2)$$

2500MHz, phi 340/theta 25

5GHz correlated calculation:

5150MHz

Maximum correlated gain: 4.36dBi

$$= 10 * \text{LOG}(((10^{(G0/20)} + 10^{(G1/20)})^2)/2)$$

$$= 10 * \text{LOG}(((10^{(-2.953/20)} + 10^{(4.216/20)})^2)/2)$$

This occurs at: 5150MHz, phi 285/theta 85;

5500MHz

Maximum correlated gain: 3.45dBi

$$= 10 * \text{LOG}(((10^{(G0/20)} + 10^{(G1/20)})^2)/2)$$

$$= 10 * \text{LOG}(((10^{(-6.820/20)} + 10^{(4.336/20)})^2)/2)$$

5500MHz, phi 300/theta 55;

5600MHz

Maximum correlated gain: 4.44dBi

$$= 10 * \text{LOG}(((10^{(G0/20)} + 10^{(G1/20)})^2)/2)$$

$$= 10 * \text{LOG}(((10^{(1.654/20)} + 10^{(1.190/20)})^2)/2)$$

5600MHz, phi 175/theta 25

5785MHz

Maximum correlated gain: 4.42dBi

$$= 10 * \text{LOG}(((10^{(G0/20)} + 10^{(G1/20)})^2)/2)$$

$$= 10 * \text{LOG}(((10^{(3.107/20)} + 10^{(-0.708/20)})^2)/2)$$

5785 MHz, phi 100/theta 40;

5850MHz

Maximum correlated gain: 4.62dBi

$$= 10 * \text{LOG}(((10^{(G0/20)} + 10^{(G1/20)})^2)/2)$$

$$= 10 * \text{LOG}(((10^{(2.486/20)} + 10^{(0.636/20)})^2)/2)$$

5850MHz, phi 245/theta 75

Directional Gain Calculation (4/4)

Because the antennas are fixed in location within the device the directional antenna gain for MIMO is calculated over a sphere using the raw spatial data taken at 5 degree steps of theta and phi for each antenna using the equations from KDB 662911 D01. The raw antenna data is located in the appendix of this report.

The correlated antenna gain was calculated using KDB 662911 D01, $F(2)(d)(i)$

The correlated gain was calculated for each point in the spatial data, and the highest value reported.

6GHz correlated calculation:

5920MHz

Maximum correlated gain: 5.02dBi

$$= 10 \cdot \text{LOG}(((10^{(G0/20)} + 10^{(G1/20)})^2)/2)$$

$$= 10 \cdot \text{LOG}(((10^{(2.968/20)} + 10^{(0.938/20)})^2)/2)$$

This occurs at: 5920MHz, phi 245/theta 75;

6500MHz

Maximum correlated gain: 4.17dBi

$$= 10 \cdot \text{LOG}(((10^{(G0/20)} + 10^{(G1/20)})^2)/2)$$

$$= 10 \cdot \text{LOG}(((10^{(-3.303/20)} + 10^{(4.095/20)})^2)/2)$$

6500MHz, phi 290/theta 60;

7125MHz

Maximum correlated gain: 4.96dBi

$$= 10 \cdot \text{LOG}(((10^{(G0/20)} + 10^{(G1/20)})^2)/2)$$

$$= 10 \cdot \text{LOG}(((10^{(3.811/20)} + 10^{(-0.427/20)})^2)/2)$$

7125MHz, phi 350/theta 65

Directional Gain Calculation

Frequency (MHz)	Uncorrelated Gain (dBi)	Correlated Gain (dBi)
2400	1.49	4.00
2450	1.80	4.80
2500	1.54	4.52
5150	2.51	4.36
5500	1.95	3.45
5600	2.33	4.44
5785	2.11	4.42
5850	1.69	4.62
5920	2.07	5.02
6500	1.81	4.17
7125	2.98	4.96

Real-time 2.4GHz Gain Meta

Gain	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Time	0.0	-2.875	-3.385	-3.725	-3.775	-3.675	-3.335	-3.135	-3.285	-3.375	-3.235	-3.045	-2.845	-2.695	-2.495	-2.325	-2.145	-1.985	-1.845	-1.725	-1.625	-1.545	-1.485	-1.445	-1.415	-1.395	-1.385	-1.385	-1.395	-1.415	-1.445	-1.485	-1.535	-1.595	-1.675	-1.775	-1.895	-2.035	-2.185	-2.345	-2.515	-2.695	-2.885	-3.085	-3.295	-3.515	-3.745	-3.985	-4.235	-4.495	-4.765	-5.045	-5.335	-5.635	-5.945	-6.265	-6.595	-6.935	-7.285	-7.645	-8.015	-8.395	-8.785	-9.185	-9.595	-10.015	-10.445	-10.885	-11.335	-11.795	-12.265	-12.745	-13.235	-13.735	-14.245	-14.765	-15.295	-15.835	-16.385	-16.945	-17.515	-18.095	-18.685	-19.285	-19.895	-20.515	-21.145	-21.785	-22.435	-23.095	-23.765	-24.445	-25.135	-25.835	-26.545	-27.265	-27.995	-28.735	-29.485	-30.245	-31.015	-31.795	-32.585	-33.385	-34.195	-35.015	-35.845	-36.685	-37.535	-38.395	-39.265	-40.145	-41.035	-41.935	-42.845	-43.765	-44.695	-45.635	-46.585	-47.545	-48.515	-49.495	-50.485	-51.485	-52.495	-53.515	-54.545	-55.585	-56.635	-57.695	-58.765	-59.845	-60.935	-62.035	-63.145	-64.265	-65.395	-66.535	-67.685	-68.845	-69.915	-71.005	-72.105	-73.215	-74.335	-75.465	-76.605	-77.755	-78.915	-80.085	-81.265	-82.455	-83.655	-84.865	-86.085	-87.315	-88.555	-89.805	-91.065	-92.335	-93.615	-94.905	-96.205	-97.515	-98.835	-100.165	-101.505	-102.855	-104.215	-105.585	-106.965	-108.355	-109.755	-111.165	-112.585	-114.015	-115.455	-116.905	-118.365	-119.835	-121.315	-122.805	-124.305	-125.815	-127.335	-128.865	-130.405	-131.955	-133.515	-135.085	-136.665	-138.255	-139.855	-141.465	-143.085	-144.715	-146.355	-148.005	-149.665	-151.335	-153.015	-154.705	-156.405	-158.115	-159.835	-161.565	-163.305	-165.055	-166.815	-168.585	-170.365	-172.155	-173.955	-175.765	-177.585	-179.415	-181.255	-183.105	-184.965	-186.835	-188.715	-190.605	-192.505	-194.415	-196.335	-198.265	-200.205	-202.155	-204.115	-206.085	-208.065	-210.055	-212.055	-214.065	-216.085	-218.115	-220.155	-222.205	-224.265	-226.335	-228.415	-230.505	-232.605	-234.715	-236.835	-238.965	-241.105	-243.255	-245.415	-247.585	-249.765	-251.955	-254.155	-256.365	-258.585	-260.815	-263.055	-265.305	-267.565	-269.835	-272.115	-274.405	-276.705	-279.015	-281.335	-283.665	-286.005	-288.355	-290.715	-293.085	-295.465	-297.855	-300.255	-302.665	-305.085	-307.515	-310.955	-313.405	-315.865	-318.335	-320.815	-323.305	-325.805	-328.315	-330.835	-333.365	-335.905	-338.455	-341.015	-343.585	-346.165	-348.755	-351.355	-353.965	-356.585	-359.215	-361.855	-364.505	-367.165	-369.835	-372.515	-375.205	-377.905	-380.615	-383.335	-386.065	-388.805	-391.555	-394.315	-397.085	-399.865	-402.655	-405.455	-408.265	-411.085	-413.915	-416.755	-420.605	-424.465	-428.335	-432.215	-436.105	-440.005	-443.915	-447.835	-451.765	-455.705	-459.655	-463.615	-467.585	-471.565	-475.555	-479.555	-483.565	-487.585	-491.615	-495.655	-499.705	-503.765	-507.835	-511.915	-515.995	-520.085	-524.185	-528.295	-532.415	-536.545	-540.685	-544.835	-548.995	-553.165	-557.345	-561.535	-565.735	-569.945	-574.165	-578.395	-582.635	-586.885	-591.145	-595.415	-599.695	-603.985	-608.285	-612.595	-616.915	-621.245	-625.585	-629.935	-634.295	-638.665	-643.045	-647.435	-651.835	-656.245	-660.665	-665.095	-669.535	-673.985	-678.445	-682.915	-687.395	-691.885	-696.385	-700.895	-705.415	-709.945	-714.485	-719.035	-723.595	-728.165	-732.745	-737.335	-741.935	-746.545	-751.165	-755.795	-760.435	-765.085	-769.745	-774.415	-779.095	-783.785	-788.485	-793.195	-797.915	-802.645	-807.385	-812.135	-816.895	-821.665	-826.445	-831.235	-836.035	-840.845	-845.665	-850.495	-855.335	-860.185	-865.045	-869.915	-874.795	-879.685	-884.585	-889.495	-894.415	-899.345	-904.285	-909.235	-914.195	-919.165	-924.145	-929.135	-934.135	-939.145	-944.165	-949.195	-954.235	-959.285	-964.345	-969.415	-974.495	-979.585	-984.685	-989.795	-994.915	-1000.045	-1005.185	-1010.335	-1015.495	-1020.665	-1025.845	-1031.035	-1036.235	-1041.445	-1046.665	-1051.895	-1057.135	-1062.385	-1067.645	-1072.915	-1078.195	-1083.485	-1088.785	-1094.095	-1099.415	-1104.745	-1110.085	-1115.435	-1120.795	-1126.165	-1131.545	-1136.935	-1142.335	-1147.745	-1153.165	-1158.595	-1164.035	-1169.485	-1174.945	-1180.415	-1185.895	-1191.385	-1196.885	-1202.395	-1207.915	-1213.445	-1218.985	-1224.535	-1230.095	-1235.665	-1241.245	-1246.835	-1252.435	-1258.045	-1263.665	-1269.295	-1274.935	-1280.585	-1286.245	-1291.915	-1297.595	-1303.285	-1308.985	-1314.695	-1320.415	-1326.145	-1331.885	-1337.635	-1343.395	-1349.165	-1354.945	-1360.735	-1366.535	-1372.345	-1378.165	-1383.995	-1389.835	-1395.685	-1401.545	-1407.415	-1413.295	-1419.185	-1425.085	-1430.995	-1436.915	-1442.845	-1448.785	-1454.735	-1460.695	-1466.665	-1472.645	-1478.635	-1484.635	-1490.645	-1496.665	-1502.695	-1508.735	-1514.785	-1520.845	-1526.915	-1532.995	-1539.085	-1545.185	-1551.295	-1557.415	-1563.545	-1569.685	-1575.835	-1581.995	-1588.165	-1594.345	-1600.535	-1606.735	-1612.945	-1619.165	-1625.395	-1631.635	-1637.885	-1644.145	-1650.415	-1656.695	-1662.985	-1669.285	-1675.595	-1681.915	-1688.245	-1694.585	-1700.935	-1707.285	-1713.645	-1719.915	-1726.195	-1732.485	-1738.785	-1745.095	-1751.415	-1757.745	-1764.085	-1770.435	-1776.795	-1783.165	-1789.545	-1795.935	-1802.335	-1808.745	-1815.165	-1821.595	-1828.035	-1834.485	-1840.945	-1847.415	-1853.895	-1860.385	-1866.885	-1873.395	-1879.915	-1886.445	-1892.985	-1899.535	-1906.095	-1912.665	-1919.245	-1925.835	-1932.435	-1939.045	-1945.665	-1952.295	-1958.935	-1965.585	-1972.245	-1978.915	-1985.595	-1992.285	-1998.985	-2005.695	-2012.415	-2019.145	-2025.885	-2032.635	-2039.395	-2046.165	-2052.945	-2059.735	-2066.535	-2073.345	-2080.165	-2086.995	-2093.835	-2100.685	-2107.545	-2114.415	-2121.295	-2128.185	-2135.085	-2141.995	-2148.915	-2155.845	-2162.785	-2169.735	-2176.695	-2183.665	-2190.645	-2197.635	-2204.635	-2211.645	-2218.665	-2225.695	-2232.735	-2239.785	-2246.845	-2253.915	-2260.995	-2268.085	-2275.185	-2282.295	-2289.415	-2296.545	-2303.685	-2310.835	-2317.995	-2325.165	-2332.345	-2339.535	-2346.735	-2353.945	-2361.165	-2368.395	-2375.635	-2382.885	-2390.145	-2397.415	-2404.695	-2411.985	-2419.285	-2426.595	-2433.915	-2441.245	-2448.585	-2455.935	-2463.295	-2470.665	-2478.045	-2485.435	-2492.835	-2500.245	-2507.665	-2515.095	-2522.535	-2529.985	-2537.445	-2544.915	-2552.395	-2559.885	-2567.385	-2574.895	-2582.415	-2589.945	-2597.485	-2605.035	-2612.595	-2620.165	-2627.745	-2635.335	-2642.935	-2650.545	-2658.165	-2665.795	-2673.435	-2681.085	-2688.745	-2696.415	-2704.095	-2711.785	-2719.485	-2727.195	-2734.915	-2742.645	-2750.385	-2758.135	-2765.895	-2773.665	-2781.445	-2789.235	-2797.035	-2804.845	-2812.665	-2820.495	-2828.335	-2836.185	-2844.045	-2851.915	-2859.795	-2867.685	-2875.585	-2883.495	-2891.415	-2899.345	-2907.285	-2915.235	-2923.195	-2931.165	-2939.145	-2947.135	-2955.135	-2963.145	-2971.165	-2979.195	-2987.235	-2995.285	-3003.345	-3011.415	-3019.495	-3027.585	-3035.685	-3043.795	-3051.915	-3059.945	-3067.985	-3076.035	-3084.095	-3092.165	-3100.245	-3108.335	-3116.435	-3124.545	-3132.665	-3140.795	-3148.935	-3157.085	-3165.245	-3173.415	-3181.595	-3189.785	-3197.985	-3206.195	-3214.415	-3222.645	-3230.885	-3239.135	-3247.395	-3255.665	-3263.945	-3272.235	-3280.535	-3288.845	-3297.165	-3305.495	-3313.835	-3322.185	-3330.545	-3338.915	-3347.295	-3355.685	-3364.085	-3372.495	-3380.915	-3389.345	-3397.785	-3406.235	-3414.695	-3423.165	-3431.645	-3440.135	-3448.635	-3457.145	-3465.665	-3474.195	-3482.735	-3491.285	-3500.845	-3509.415	-3517.995	-3526.585	-3535.185	-3543.795	-3552.415	-3561.045	-3569.685	-3578.335	-3586.995	-3595.665	-3604.345	-3613.035	-3621.735	-3630.445	-3639.165	-3647.895	-3656.635	-3665.385	-3674.145	-3682.915	-3691.695	-3700.485	-3709.285	-3718.095	-3726.915	-3735.745	-3744.585	-3753.435	-3762.295	-3771.165	-3780.045	-3788.935	-3797.845	-3806.765	-3815.695	-3824.635	-3833.585	-3842.545	-3851.515	-3860.495	-3869.485	-3878.485	-3887.495	-3896.515	-3905.545	-3914.585	-3923.635	-3932.695	-3941.765	-3950.845	-3959.935	-3969.035	-3978.145	-3987.265	-3996.395	-4005.535	-4014.685	-4023.845	-4033.015	-4042.195	-4051.385	-4060.585	-4069.795	-4079.015	-4088.245	-4097.485	-4106.735	-4115.995	-4125.265	-4134.545	-4143.835	-4153.135	-4162.445	-4171.765	-4181.095	-4190.435	-4200.785	-4210.145	-4220.515	-4230.895	-4241.285	-4251.685	-4262.095	-4272.515	-4282.945	-4293.385	-4303.835	-4314.295	-4324.765	-4335.245	-4345.735	-4356.235	-4366.745	-4377.265	-4387.795	-4398.335	-4408.885	-4419.445	-4429.915	-4440.395	-4450.885	-4461.385	-4471.895	-4482.415	-4492.945	-4503.485	-4514.035	-4524.595	-4535.165	-4545.745	-4556.335	-4566.935	-4577.545	-4588.165	-4598.795	-4609.435	-4620.085	-4630.745	-4641.415	-4652.095	-4662.785	-4673.485	-4684.195	-4694.915	-4705.645	-4716.385	-4727.135	-4737.895	-4748.665	-4759.445	-4770.235	-4781.035	-4791.845	-4802.665	-4813.495	-4824.335	-4835.185

Real Data @ 2.4GHz Gain Phi

(gain)	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
0.0	-3.19	-3.18	-3.24	-3.37	-3.56	-3.83	-4.16	-4.58	-5.08	-5.68	-6.39	-7.23	-8.21	-9.37	-10.75	-12.39	-14.32	-16.43	-18.75	-21.35	-24.24	-27.43	-30.93	-34.75	-38.89	-43.35	-48.13	-53.24	-58.68	-64.45	-70.56	-77.02	-83.84	-91.02	-98.56	-106.45	-114.69	-123.28	-132.22	-141.51	-151.15	-161.14	-171.48	-182.17	-193.21	-204.60	-216.34	-228.43	-240.87	-253.66	-266.80	-280.29	-294.13	-308.32	-322.86	-337.75	-352.98	-368.55	-384.46	-400.71	-417.31	-434.26	-451.56	-469.21	-487.22	-505.58	-524.30	-543.38	-562.82	-582.62	-602.78	-623.29	-644.16	-665.39	-686.98	-708.93	-731.24	-753.91	-776.94	-799.33	-822.08	-845.19	-868.66	-892.49	-916.67	-941.20	-966.08	-991.31	-1016.89	-1042.81	-1069.07	-1095.67	-1122.60	-1149.86	-1177.45	-1205.37	-1233.62	-1262.20	-1291.12	-1320.37	-1350.00	-1380.00	-1410.37	-1441.10	-1472.19	-1503.64	-1535.45	-1567.62	-1599.15	-1631.03	-1663.26	-1695.84	-1728.76	-1762.02	-1795.63	-1829.59	-1863.90	-1898.56	-1933.57	-1968.93	-2004.65	-2040.73	-2077.17	-2113.97	-2151.12	-2188.63	-2226.50	-2264.73	-2303.32	-2342.26	-2381.55	-2421.19	-2461.18	-2501.52	-2542.21	-2583.25	-2624.64	-2666.38	-2708.47	-2750.91	-2793.70	-2836.84	-2880.33	-2924.17	-2968.36	-3012.90	-3057.79	-3103.03	-3148.62	-3194.56	-3240.85	-3287.49	-3334.48	-3381.82	-3429.51	-3477.55	-3525.94	-3574.63	-3623.62	-3672.91	-3722.50	-3772.39	-3822.58	-3873.07	-3923.86	-3974.95	-4026.34	-4078.03	-4129.92	-4182.01	-4234.30	-4286.79	-4339.48	-4392.37	-4445.46	-4498.85	-4552.54	-4606.53	-4660.82	-4715.41	-4770.30	-4825.49	-4880.98	-4936.77	-4992.86	-5049.25	-5105.94	-5162.93	-5220.22	-5277.81	-5335.70	-5393.89	-5452.38	-5511.17	-5570.26	-5629.65	-5689.34	-5749.33	-5809.62	-5870.21	-5931.10	-5992.29	-6053.68	-6115.37	-6177.36	-6239.65	-6302.24	-6365.13	-6428.32	-6491.81	-6555.60	-6619.69	-6684.08	-6748.77	-6813.76	-6879.05	-6944.64	-7010.53	-7076.72	-7143.21	-7210.00	-7277.09	-7344.48	-7412.17	-7480.16	-7548.45	-7617.04	-7685.93	-7755.12	-7824.61	-7894.40	-7964.49	-8034.88	-8105.57	-8176.56	-8247.85	-8319.44	-8391.33	-8463.52	-8536.01	-8608.80	-8681.89	-8755.28	-8828.97	-8902.96	-8977.25	-9051.84	-9126.73	-9201.92	-9277.41	-9353.20	-9429.29	-9505.68	-9582.37	-9659.36	-9736.65	-9814.24	-9892.13	-9970.32	-10048.81	-10127.60	-10206.79	-10286.28	-10366.07	-10446.16	-10526.45	-10606.94	-10687.73	-10768.82	-10849.21	-10929.90	-11010.89	-11092.18	-11173.67	-11255.36	-11337.25	-11419.34	-11501.63	-11584.12	-11666.81	-11749.80	-11833.09	-11916.58	-12000.27	-12084.16	-12168.25	-12252.54	-12337.03	-12421.72	-12506.71	-12591.90	-12677.39	-12763.18	-12849.17	-12935.36	-13021.75	-13108.34	-13195.13	-13282.12	-13369.31	-13456.70	-13544.29	-13632.08	-13719.97	-13808.06	-13896.35	-13984.84	-14073.53	-14162.42	-14251.51	-14340.80	-14430.39	-14520.18	-14610.17	-14700.36	-14790.75	-14881.44	-14972.33	-15063.42	-15154.71	-15246.20	-15337.89	-15429.78	-15521.87	-15614.16	-15706.65	-15799.34	-15892.23	-15985.32	-16078.71	-16172.30	-16266.09	-16360.08	-16454.27	-16548.66	-16643.25	-16738.04	-16833.03	-16928.22	-17023.61	-17119.20	-17215.09	-17311.18	-17407.47	-17503.96	-17600.75	-17697.84	-17795.23	-17892.92	-17990.91	-18089.10	-18187.49	-18286.08	-18384.87	-18483.86	-18583.05	-18682.44	-18782.03	-18881.82	-18981.91	-19082.20	-19182.69	-19283.38	-19384.27	-19485.36	-19586.65	-19688.14	-19789.83	-19891.72	-19993.81	-20096.10	-20198.59	-20301.28	-20404.17	-20507.26	-20610.55	-20714.04	-20817.73	-20921.62	-21025.71	-21130.00	-21234.49	-21339.18	-21444.07	-21549.16	-21654.45	-21759.94	-21865.63	-21971.52	-22077.61	-22183.90	-22290.39	-22397.08	-22503.97	-22611.06	-22718.35	-22825.84	-22933.53	-23041.42	-23149.51	-23257.80	-23366.29	-23474.98	-23583.87	-23692.96	-23802.25	-23911.74	-24021.43	-24131.32	-24241.41	-24351.70	-24462.19	-24572.88	-24684.67	-24796.66	-24908.95	-25021.44	-25134.13	-25247.02	-25360.11	-25473.40	-25586.89	-25700.58	-25814.47	-25928.56	-26042.85	-26157.34	-26272.03	-26386.92	-26502.11	-26617.60	-26733.29	-26849.18	-26965.27	-27081.56	-27198.05	-27314.74	-27431.73	-27549.02	-27666.51	-27784.20	-27902.19	-28020.38	-28138.77	-28257.36	-28376.15	-28495.14	-28614.33	-28733.82	-28853.51	-28973.40	-29093.49	-29213.78	-29334.27	-29454.96	-29575.85	-29696.94	-29818.23	-29939.72	-30061.41	-30183.30	-30305.39	-30427.68	-30550.17	-30672.86	-30795.75	-30918.84	-31042.13	-31165.62	-31289.31	-31413.20	-31537.29	-31661.58	-31786.07	-31910.76	-32035.65	-32160.74	-32286.03	-32411.52	-32537.21	-32663.10	-32789.19	-32915.48	-33041.97	-33168.66	-33295.55	-33422.64	-33549.93	-33677.42	-33805.11	-33933.00	-34061.09	-34189.38	-34317.87	-34446.56	-34575.45	-34704.54	-34833.83	-34963.32	-35093.01	-35222.90	-35353.09	-35483.48	-35614.07	-35744.86	-35875.85	-36007.04	-36138.43	-36270.02	-36401.81	-36533.80	-36666.09	-36798.58	-36931.27	-37064.16	-37197.25	-37330.54	-37464.03	-37597.72	-37731.71	-37865.90	-38000.39	-38135.08	-38269.97	-38405.16	-38540.45	-38675.94	-38811.63	-38947.52	-39083.71	-39220.10	-39356.69	-39493.48	-39630.47	-39767.66	-39905.05	-40042.64	-40180.43	-40318.42	-40456.61	-40595.00	-40733.59	-40872.38	-41011.37	-41150.56	-41289.95	-41429.54	-41569.33	-41709.32	-41849.51	-41989.90	-42130.49	-42271.28	-42412.27	-42553.46	-42694.85	-42836.44	-42978.23	-43120.22	-43262.41	-43404.80	-43547.39	-43690.18	-43833.17	-43976.36	-44119.75	-44263.34	-44407.13	-44551.22	-44695.51	-44840.00	-44984.69	-45129.58	-45274.67	-45419.96	-45565.45	-45711.14	-45857.03	-45993.12	-46139.41	-46285.90	-46432.59	-46579.48	-46726.57	-46873.86	-47021.35	-47169.04	-47316.93	-47465.02	-47613.31	-47761.80	-47910.49	-48059.38	-48208.47	-48357.76	-48507.25	-48656.94	-48806.93	-48957.12	-49107.51	-49258.10	-49408.89	-49559.88	-49711.07	-49862.46	-50014.05	-50165.84	-50317.83	-50469.92	-50622.21	-50774.70	-50927.39	-51080.28	-51233.37	-51386.56	-51539.85	-51693.34	-51846.93	-52000.72	-52154.81	-52309.10	-52463.59	-52618.28	-52773.17	-52928.26	-53083.55	-53238.94	-53394.53	-53550.32	-53706.31	-53862.50	-54018.89	-54175.48	-54332.27	-54489.26	-54646.45	-54803.84	-54961.43	-55119.22	-55277.21	-55435.40	-55593.79	-55752.38	-55911.17	-56070.16	-56229.35	-56388.74	-56548.33	-56708.12	-56868.11	-57028.30	-57188.69	-57349.28	-57509.97	-57670.86	-57831.95	-57993.24	-58154.73	-58316.42	-58478.31	-58640.40	-58802.69	-58965.18	-59127.87	-59290.76	-59453.85	-59617.14	-59780.63	-59944.32	-60108.31	-60272.50	-60436.89	-60601.48	-60766.27	-60931.26	-61096.45	-61261.84	-61427.53	-61593.52	-61759.81	-61926.30	-62092.99	-62259.88	-62426.97	-62594.26	-62761.75	-62929.44	-63097.33	-63265.42	-63433.71	-63602.20	-63770.89	-63939.78	-64108.87	-64278.16	-64447.65	-64617.34	-64787.23	-64957.32	-65127.61	-65298.10	-65468.79	-65639.68	-65810.77	-65982.06	-66153.55	-66325.24	-66497.13	-66669.22	-66841.51	-67014.00	-67186.69	-67359.58	-67532.67	-67705.96	-67879.45	-68053.14	-68227.03	-68401.12	-68575.41	-68750.00	-68924.79	-69099.78	-69274.97	-69450.36	-69625.95	-69801.74	-69977.73	-70153.92	-70330.31	-70506.90	-70683.69	-70860.68	-71037.87	-71215.26	-71392.85	-71570.64	-71748.63	-71926.82	-72105.21	-72283.80	-72462.59	-72641.58	-72820.77	-73000.16	-73179.75	-73359.54	-73539.53	-73719.72	-73900.11	-74080.70	-74261.49	-74442.48	-74623.67	-74805.06	-74986.65	-75168.44	-75350.43	-75532.62	-75715.11	-75897.80	-76080.79	-76263.98	-76447.37	-76630.96	-76814.75	-77000.34	-77185.13	-77369.92	-77554.91	-77740.10	-77925.49	-78111.08	-78296.87	-78482.86	-78669.05	-78855.44	-79042.03	-79228.82	-79415.81	-79603.00	-79790.39	-79977.98	-80165.77	-80353.76	-80541.95	-80730.34	-80918.93	-81107.72	-81296.71	-81485.90	-81675.29	-81864.88	-82054.67	-82244.66	-82434.85	-82625.24	-82815.83	-83006.62	-83197.61	-83388.80	-83580.19	-83771.78	-83963.57	-84155.56	-84347.75	-84540.14	-84732.73	-84925.52	-85118.51	-85311.70	-85505.09	-85698.68	-85892.47	-86086.46	-86280.65	-86475.04	-86669.63	-86864.42	-87059.41	-87254.60	-87450

Raw Data Out 2.45GHz Gain: 11

[dBm Pin]	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
0.00	-2466	-2547	-1772	-1119	-572	-1056	-2355	-5048	-7088	-9319	1004	-1222	-876	-6863	-5682	-4311	-3106	-1	-3	-5	-7	-9	-11	-13	-15	-17	-19	-21	-23	-25	-27	-29	-31	-33	-35	-37	-39	-41	-43	-45	-47	-49	-51	-53	-55	-57	-59	-61	-63	-65	-67	-69	-71	-73	-75	-77	-79	-81	-83	-85	-87	-89	-91	-93	-95	-97	-99	-101	-103	-105	-107	-109	-111	-113	-115	-117	-119	-121	-123	-125	-127	-129	-131	-133	-135	-137	-139	-141	-143	-145	-147	-149	-151	-153	-155	-157	-159	-161	-163	-165	-167	-169	-171	-173	-175	-177	-179	-181	-183	-185	-187	-189	-191	-193	-195	-197	-199	-201	-203	-205	-207	-209	-211	-213	-215	-217	-219	-221	-223	-225	-227	-229	-231	-233	-235	-237	-239	-241	-243	-245	-247	-249	-251	-253	-255	-257	-259	-261	-263	-265	-267	-269	-271	-273	-275	-277	-279	-281	-283	-285	-287	-289	-291	-293	-295	-297	-299	-301	-303	-305	-307	-309	-311	-313	-315	-317	-319	-321	-323	-325	-327	-329	-331	-333	-335	-337	-339	-341	-343	-345	-347	-349	-351	-353	-355	-357	-359	-361	-363	-365	-367	-369	-371	-373	-375	-377	-379	-381	-383	-385	-387	-389	-391	-393	-395	-397	-399	-401	-403	-405	-407	-409	-411	-413	-415	-417	-419	-421	-423	-425	-427	-429	-431	-433	-435	-437	-439	-441	-443	-445	-447	-449	-451	-453	-455	-457	-459	-461	-463	-465	-467	-469	-471	-473	-475	-477	-479	-481	-483	-485	-487	-489	-491	-493	-495	-497	-499	-501	-503	-505	-507	-509	-511	-513	-515	-517	-519	-521	-523	-525	-527	-529	-531	-533	-535	-537	-539	-541	-543	-545	-547	-549	-551	-553	-555	-557	-559	-561	-563	-565	-567	-569	-571	-573	-575	-577	-579	-581	-583	-585	-587	-589	-591	-593	-595	-597	-599	-601	-603	-605	-607	-609	-611	-613	-615	-617	-619	-621	-623	-625	-627	-629	-631	-633	-635	-637	-639	-641	-643	-645	-647	-649	-651	-653	-655	-657	-659	-661	-663	-665	-667	-669	-671	-673	-675	-677	-679	-681	-683	-685	-687	-689	-691	-693	-695	-697	-699	-701	-703	-705	-707	-709	-711	-713	-715	-717	-719	-721	-723	-725	-727	-729	-731	-733	-735	-737	-739	-741	-743	-745	-747	-749	-751	-753	-755	-757	-759	-761	-763	-765	-767	-769	-771	-773	-775	-777	-779	-781	-783	-785	-787	-789	-791	-793	-795	-797	-799	-801	-803	-805	-807	-809	-811	-813	-815	-817	-819	-821	-823	-825	-827	-829	-831	-833	-835	-837	-839	-841	-843	-845	-847	-849	-851	-853	-855	-857	-859	-861	-863	-865	-867	-869	-871	-873	-875	-877	-879	-881	-883	-885	-887	-889	-891	-893	-895	-897	-899	-901	-903	-905	-907	-909	-911	-913	-915	-917	-919	-921	-923	-925	-927	-929	-931	-933	-935	-937	-939	-941	-943	-945	-947	-949	-951	-953	-955	-957	-959	-961	-963	-965	-967	-969	-971	-973	-975	-977	-979	-981	-983	-985	-987	-989	-991	-993	-995	-997	-999	-1001	-1003	-1005	-1007	-1009	-1011	-1013	-1015	-1017	-1019	-1021	-1023	-1025	-1027	-1029	-1031	-1033	-1035	-1037	-1039	-1041	-1043	-1045	-1047	-1049	-1051	-1053	-1055	-1057	-1059	-1061	-1063	-1065	-1067	-1069	-1071	-1073	-1075	-1077	-1079	-1081	-1083	-1085	-1087	-1089	-1091	-1093	-1095	-1097	-1099	-1101	-1103	-1105	-1107	-1109	-1111	-1113	-1115	-1117	-1119	-1121	-1123	-1125	-1127	-1129	-1131	-1133	-1135	-1137	-1139	-1141	-1143	-1145	-1147	-1149	-1151	-1153	-1155	-1157	-1159	-1161	-1163	-1165	-1167	-1169	-1171	-1173	-1175	-1177	-1179	-1181	-1183	-1185	-1187	-1189	-1191	-1193	-1195	-1197	-1199	-1201	-1203	-1205	-1207	-1209	-1211	-1213	-1215	-1217	-1219	-1221	-1223	-1225	-1227	-1229	-1231	-1233	-1235	-1237	-1239	-1241	-1243	-1245	-1247	-1249	-1251	-1253	-1255	-1257	-1259	-1261	-1263	-1265	-1267	-1269	-1271	-1273	-1275	-1277	-1279	-1281	-1283	-1285	-1287	-1289	-1291	-1293	-1295	-1297	-1299	-1301	-1303	-1305	-1307	-1309	-1311	-1313	-1315	-1317	-1319	-1321	-1323	-1325	-1327	-1329	-1331	-1333	-1335	-1337	-1339	-1341	-1343	-1345	-1347	-1349	-1351	-1353	-1355	-1357	-1359	-1361	-1363	-1365	-1367	-1369	-1371	-1373	-1375	-1377	-1379	-1381	-1383	-1385	-1387	-1389	-1391	-1393	-1395	-1397	-1399	-1401	-1403	-1405	-1407	-1409	-1411	-1413	-1415	-1417	-1419	-1421	-1423	-1425	-1427	-1429	-1431	-1433	-1435	-1437	-1439	-1441	-1443	-1445	-1447	-1449	-1451	-1453	-1455	-1457	-1459	-1461	-1463	-1465	-1467	-1469	-1471	-1473	-1475	-1477	-1479	-1481	-1483	-1485	-1487	-1489	-1491	-1493	-1495	-1497	-1499	-1501	-1503	-1505	-1507	-1509	-1511	-1513	-1515	-1517	-1519	-1521	-1523	-1525	-1527	-1529	-1531	-1533	-1535	-1537	-1539	-1541	-1543	-1545	-1547	-1549	-1551	-1553	-1555	-1557	-1559	-1561	-1563	-1565	-1567	-1569	-1571	-1573	-1575	-1577	-1579	-1581	-1583	-1585	-1587	-1589	-1591	-1593	-1595	-1597	-1599	-1601	-1603	-1605	-1607	-1609	-1611	-1613	-1615	-1617	-1619	-1621	-1623	-1625	-1627	-1629	-1631	-1633	-1635	-1637	-1639	-1641	-1643	-1645	-1647	-1649	-1651	-1653	-1655	-1657	-1659	-1661	-1663	-1665	-1667	-1669	-1671	-1673	-1675	-1677	-1679	-1681	-1683	-1685	-1687	-1689	-1691	-1693	-1695	-1697	-1699	-1701	-1703	-1705	-1707	-1709	-1711	-1713	-1715	-1717	-1719	-1721	-1723	-1725	-1727	-1729	-1731	-1733	-1735	-1737	-1739	-1741	-1743	-1745	-1747	-1749	-1751	-1753	-1755	-1757	-1759	-1761	-1763	-1765	-1767	-1769	-1771	-1773	-1775	-1777	-1779	-1781	-1783	-1785	-1787	-1789	-1791	-1793	-1795	-1797	-1799	-1801	-1803	-1805	-1807	-1809	-1811	-1813	-1815	-1817	-1819	-1821	-1823	-1825	-1827	-1829	-1831	-1833	-1835	-1837	-1839	-1841	-1843	-1845	-1847	-1849	-1851	-1853	-1855	-1857	-1859	-1861	-1863	-1865	-1867	-1869	-1871	-1873	-1875	-1877	-1879	-1881	-1883	-1885	-1887	-1889	-1891	-1893	-1895	-1897	-1899	-1901	-1903	-1905	-1907	-1909	-1911	-1913	-1915	-1917	-1919	-1921	-1923	-1925	-1927	-1929	-1931	-1933	-1935	-1937	-1939	-1941	-1943	-1945	-1947	-1949	-1951	-1953	-1955	-1957	-1959	-1961	-1963	-1965	-1967	-1969	-1971	-1973	-1975	-1977	-1979	-1981	-1983	-1985	-1987	-1989	-1991	-1993	-1995	-1997	-1999	-2001	-2003	-2005	-2007	-2009	-2011	-2013	-2015	-2017	-2019	-2021	-2023	-2025	-2027	-2029	-2031	-2033	-2035	-2037	-2039	-2041	-2043	-2045	-2047	-2049	-2051	-2053	-2055	-2057	-2059	-2061	-2063	-2065	-2067	-2069	-2071	-2073	-2075	-2077	-2079	-2081	-2083	-2085	-2087	-2089	-2091	-2093	-2095	-2097	-2099	-2101	-2103	-2105	-2107	-2109	-2111	-2113	-2115	-2117	-2119	-2121	-2123	-2125	-2127	-2129	-2131	-2133	-2135	-2137	-2139	-2141	-2143	-2145	-2147	-2149	-2151	-2153	-2155	-2157	-2159	-2161	-2163	-2165	-2167	-2169	-2171	-2173	-2175	-2177	-2179	-2181	-2183	-2185	-2187	-2189	-2191	-2193	-2195	-2197	-2199	-2201	-2203	-2205	-2207	-2209	-2211	-2213	-2215	-2217	-2219	-2221	-2223	-2225	-2227	-2229	-2231	-2233	-2235	-2237	-2239	-2241	-2243	-2245	-2247	-2249	-2251	-2253	-2255	-2257	-2259	-2261	-2263	-2265	-2267	-2269	-2271	-2273	-2275	-2277	-2279	-2281	-2283	-2285	-2287	-2289	-2291	-2293	-2295	-2297	-2299	-2301	-2303	-2305	-2307	-2309	-2311	-2313	-2315	-2317	-2319	-2321	-2323	-2325	-2327	-2329	-2331	-2333	-2335	-2337	-2339	-2341	-2343	-2345	-2347	-2349	-2351	-2353	-2355	-2357	-2359	-2361	-2363	-2365	-2367	-2369	-2371	-2373	-2375	-2377	-2379	-2381	-2383	-2385	-2387	-2389	-2391	-2393	-2395	-2397	-2399	-2401	-2403	-2405	-2407	-2409	-2411	-2413	-2415	-2417	-2419	-2421	-2423	-2425	-2427	-2429	-2431	-2433	-2435	-2437	-2439	-2441	-2443	-2445	-2447	-2449	-2451	-2453	-2455	-2457	-2459	-2461	-2463	-2465	-2467	-2469	-2471	-2473	-2475	-2477	-2479	-2481	-2483	-2485	-2487	-2489	-2491	-2493	-2495	-2497	-2499	-2501	-2503	-2505	-2507	-2509	-2511	-2513	-2515	-2517	-2519	-2521	-2523	-2525	-2527	-2529	-2531	-2533	-2535	-2537	-2539	-2541	-2543	-2545	-2547	-2549	-2551	-2553	-2555	-2557	-2559	-2561	-2563	-2565	-2567	-2569	-2571	-2573	-2575	-2577	-2579	-2581	-2583	-2585	-2587	-2589	-2591	-2593	-2595	-2597	-2599	-2601	-2603	-2605	-2607	-2609	-2611	-2613	-2615	-2617	-2619	-2621	-2623	-2625	-2627	-2629	-2631	-2633	-2635	-2637	-2639	-2641	-2643	-2645	-2647	-2649	-2651	-2653	-2655	-2657	-2659	-2661	-2663	-2665	-2667	-2669	-2671	-2673	-2675	-2677

Raw Data @ Ant3 2.5GHz Gain Theta

iGain	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.40	0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.60	0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68	0.69	0.70	0.71	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79	0.80	0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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(pair Pb)	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	49.0	49.1	49.2	49.3	49.4	49.5	49.6	49.7	49.8	49.9	50.0	50.1	50.2	50.3	50.4	50.5	50.6	50.7	50.8	50.9	51.0	51.1	51.2	51.3	51.4	51.5	51.6	51.7	51.8	51.9	52.0	52.1	52.2	52.3	52.4	52.5	52.6	52.7	52.8	52.9	53.0	53.1	53.2	53.3	53.4	53.5	53.6	53.7	53.8	53.9	54.0	54.1	54.2	54.3	54.4	54.5	54.6	54.7	54.8	54.9	55.0	55.1	55.2	55.3	55.4	55.5	55.6	55.7	55.8	55.9	56.0	56.1	56.2	56.3	56.4	56.5	56.6	56.7	56.8	56.9	57.0	57.1	57.2	57.3	57.4	57.5	57.6	57.7	57.8	57.9	58.0	58.1	58.2	58.3	58.4	58.5	58.6	58.7	58.8	58.9	59.0	59.1	59.2	59.3	59.4	59.5	59.6	59.7	59.8	59.9	60.0	60.1	60.2	60.3	60.4	60.5	60.6	60.7	60.8	60.9	61.0	61.1	61.2	61.3	61.4	61.5	61.6	61.7	61.8	61.9	62.0	62.1	62.2	62.3	62.4	62.5	62.6	62.7	62.8	62.9	63.0	63.1	63.2	63.3	63.4	63.5	63.6	63.7	63.8	63.9	64.0	64.1	64.2	64.3	64.4	64.5	64.6	64.7	64.8	64.9	65.0	65.1	65.2	65.3	65.4	65.5	65.6	65.7	65.8	65.9	66.0	66.1	66.2	66.3	66.4	66.5	66.6	66.7	66.8	66.9	67.0	67.1	67.2	67.3	67.4	67.5	67.6	67.7	67.8	67.9	68.0	68.1	68.2	68.3	68.4	68.5	68.6	68.7	68.8	68.9	69.0	69.1	69.2	69.3	69.4	69.5	69.6	69.7	69.8	69.9	70.0	70.1	70.2	70.3	70.4	70.5	70.6	70.7	70.8	70.9	71.0	71.1	71.2	71.3	71.4	71.5	71.6	71.7	71.8	71.9	72.0	72.1	72.2	72.3	72.4	72.5	72.6	72.7	72.8	72.9	73.0	73.1	73.2	73.3	73.4	73.5	73.6	73.7	73.8	73.9	74.0	74.1	74.2	74.3	74.4	74.5	74.6	74.7	74.8	74.9	75.0	75.1	75.2	75.3	75.4	75.5	75.6	75.7	75.8	75.9	76.0	76.1	76.2	76.3	76.4	76.5	76.6	76.7	76.8	76.9	77.0	77.1	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9	78.0	78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8	78.9	79.0	79.1	79.2	79.3	79.4	79.5	79.6	79.7	79.8	79.9	80.0	80.1	80.2	80.3	80.4	80.5	80.6	80.7	80.8	80.9	81.0	81.1	81.2	81.3	81.4	81.5	81.6	81.7	81.8	81.9	82.0	82.1	82.2	82.3	82.4	82.5	82.6	82.7	82.8	82.9	83.0	83.1	83.2	83.3	83.4	83.5	83.6	83.7	83.8	83.9	84.0	84.1	84.2	84.3	84.4	84.5	84.6	84.7	84.8	84.9	85.0	85.1	85.2	85.3	85.4	85.5	85.6	85.7	85.8	85.9	86.0	86.1	86.2	86.3	86.4	86.5	86.6	86.7	86.8	86.9	87.0	87.1	87.2	87.3	87.4	87.5	87.6	87.7	87.8	87.9	88.0	88.1	88.2	88.3	88.4	88.5	88.6	88.7	88.8	88.9	89.0	89.1	89.2	89.3	89.4	89.5	89.6	89.7	89.8	89.9	90.0	90.1	90.2	90.3	90.4	90.5	90.6	90.7	90.8	90.9	91.0	91.1	91.2	91.3	91.4	91.5	91.6	91.7	91.8	91.9	92.0	92.1	92.2	92.3	92.4	92.5	92.6	92.7	92.8	92.9	93.0	93.1	93.2	93.3	93.4	93.5	93.6	93.7	93.8	93.9	94.0	94.1	94.2	94.3	94.4	94.5	94.6	94.7	94.8	94.9	95.0	95.1	95.2	95.3	95.4	95.5	95.6	95.7	95.8	95.9	96.0	96.1	96.2	96.3	96.4	96.5	96.6	96.7	96.8	96.9	97.0	97.1	97.2	97.3	97.4	97.5	97.6	97.7	97.8	97.9	98.0	98.1	98.2	98.3	98.4	98.5	98.6	98.7	98.8	98.9	99.0	99.1	99.2	99.3	99.4	99.5	99.6	99.7	99.8	99.9	100.0
0.0	-2.058	-1.46	-0.963	-0.555	-0.229	-0.021	0.199	0.309	0.352	0.239	0.029	-0.061	-0.148	-0.45	-0.783	-1.027	-1.069	-1.247	-1.354	-1.437	-1.476	-1.491	-1.465	-1.019	-0.429	0.129	0.564	0.879	0.984	0.984	0.774	0.479	0.184	-0.197	-0.597	-1.095	-1.662	-2.32	-3.08	-3.961	-4.931	-6.219	-7.766	-9.568	-12.017	-15.531	-21.607	-40.017	21.044	-15.981	-11.776	-9.376	-7.532	-6.103	-4.927	-3.947	-3.133	-2.454	-1.89	-1.425	-1.094	-0.794	-0.533	-0.384	-0.302	-0.248	0.34	-0.641	-0.654	-0.924	-1.278	-1.724	-2.277	-2.953	-3.779	-4.674	-5.628	-6.638	-7.688	-8.768	-9.868	-10.978	-12.078	-13.158	-14.218	-15.258	-16.278	-17.278	-18.258	-19.218	-20.158	-21.078	-21.978	-22.858	-23.718	-24.558	-25.378	-26.178	-26.958	-27.718	-28.458	-29.178	-29.878	-30.558	-31.218	-31.858	-32.478	-33.078	-33.658	-34.218	-34.758	-35.278	-35.778	-36.258	-36.718	-37.158	-37.578	-37.978	-38.358	-38.718	-39.058	-39.378	-39.678	-39.958	-40.218	-40.468	-40.698	-40.908	-41.098	-41.268	-41.418	-41.548	-41.658	-41.748	-41.818	-41.868	-41.908	-41.938	-41.958	-41.968	-41.968	-41.958	-41.938	-41.908	-41.868	-41.818	-41.748	-41.658	-41.548	-41.418	-41.268	-41.108	-40.928	-40.728	-40.508	-40.268	-40.008	-39.728	-39.428	-39.108	-38.768	-38.408	-38.028	-37.628	-37.208	-36.768	-36.308	-35.828	-35.328	-34.808	-34.268	-33.708	-33.128	-32.528	-31.908	-31.268	-30.608	-29.928	-29.228	-28.508	-27.768	-27.008	-26.228	-25.428	-24.608	-23.768	-22.908	-22.028	-21.128	-20.208	-19.268	-18.308	-17.328	-16.328	-15.308	-14.268	-13.208	-12.128	-11.028	-9.908	-8.768	-7.608	-6.428	-5.228	-4.008	-2.768	-1.508	-0.228	0.958	2.158	3.358	4.558	5.758	6.958	8.158	9.358	10.558	11.758	12.958	14.158	15.358	16.558	17.758	18.958	20.158	21.358	22.558	23.758	24.958	26.158	27.358	28.558	29.758	30.958	32.158	33.358	34.558	35.758	36.958	38.158	39.358	40.558	41.758	42.958	44.158	45.358	46.558	47.758	48.958	50.158	51.358	52.558	53.758	54.958	56.158	57.358	58.558	59.758	60.958	62.158	63.358	64.558	65.758	66.958	68.158	69.358	70.558	71.758	72.958	74.158	75.358	76.558	77.758	78.958	80.158	81.358	82.558	83.758	84.958	86.158	87.358	88.558	89.758	90.958	92.158	93.358	94.558	95.758	96.958	98.158	99.358	100.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
0.1	1.011	1.465	1.817	2.107	2.227	2.218	2.201	2.147	2.054	1.961	1.868	1.775	1.682	1.589	1.496	1.403	1.310	1.217	1.124	1.031	0.938	0.845	0.752	0.659	0.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																



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