Antenna Radiation Pattern Test Report

1. Sample Information

Brand Name	NOKIA
Part Number	3TG02676AAAA
Applicant	NOKIA
Manufacturer	Nokia Solutions and Networks Oy

2. Testing Location

Testing Location	
NOKIA SELL	ADD: 389#, Ningqiao Road, Pudong District, China (Shanghai)

Test Condition	Test Engineer	Test Environment (°C / %)	Test Date
Radiated	Guang Chen	20-24 / 45-60	03.22.2023~03.23.2023
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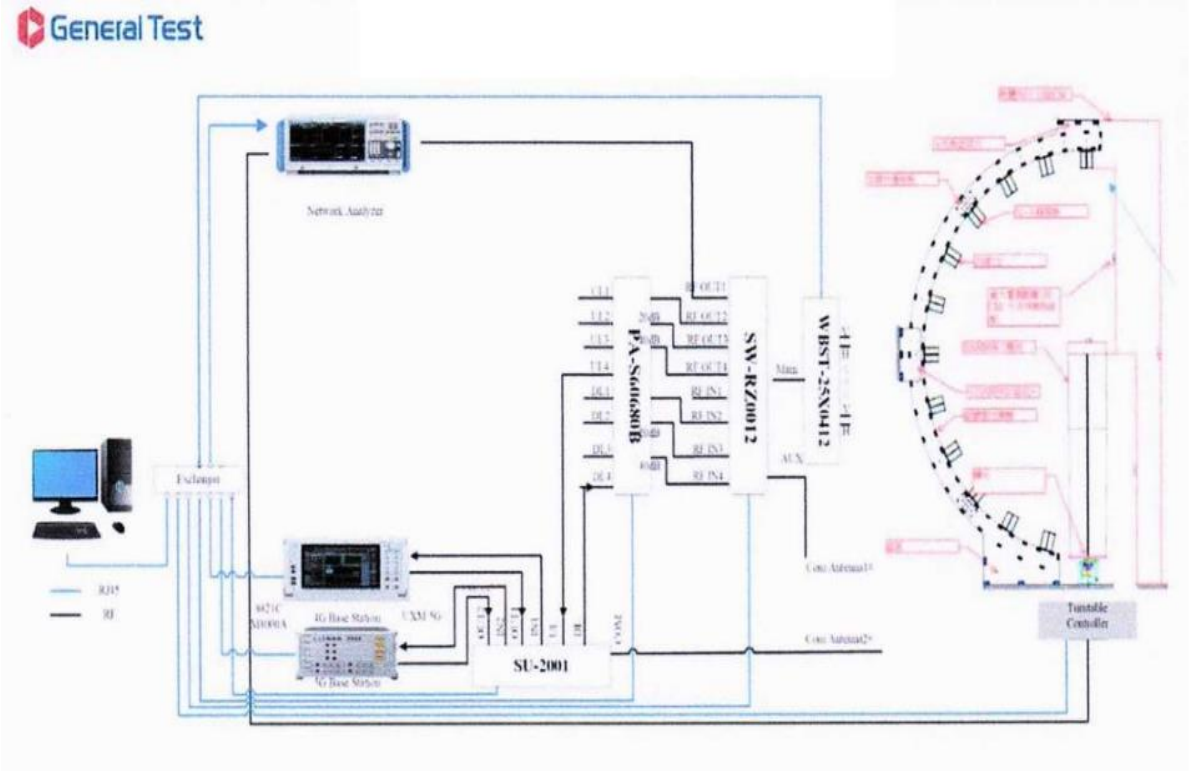
3. Antenna Information

Ant. Position	Brand Name	Part Number	Ant. Type	Connector
BT Antenna	NOKIA	3TG02676AAAA	Dipole	I-PEX

4. Test Frequency

Band (MHz)	Test Frequency (MHz)
2400-2485	2400/2485

5. Test Configuration



6. Test Equipment List and Calibration

Equipment Name	Manufacturer	Model	SW Version	Cal. Due Date
OTA test filed	GTS	GTS 2800	MaxSign Libra, v1.1.17	2023/10/31
ENA Series Network Analyzer	Agilent Technologies	E5071C	NA	2023/6/23

7. Test Method

The “great circle” cut method, whereby the Measurement Antenna remains fixed and the EUT is rotated about two axes in sequential order. The radiated RF performance of the Equipment Under Test (EUT) is measured by sampling the radiated transmit power of the mobile at various

locations surrounding the device. A three-dimensional characterization of the 'transmit' performance of the EUT is pieced together by analyzing the data from the spatially distributed measurements.

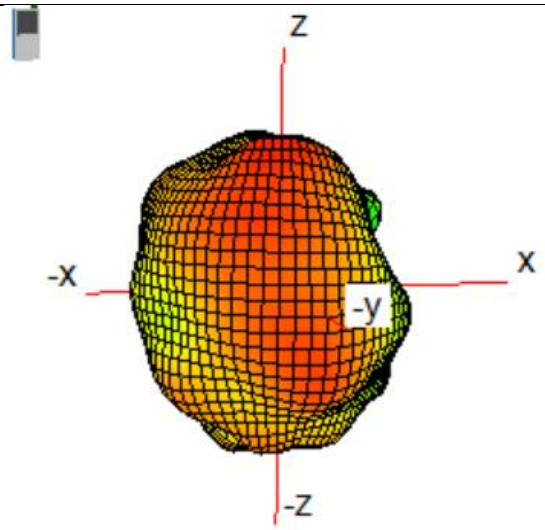
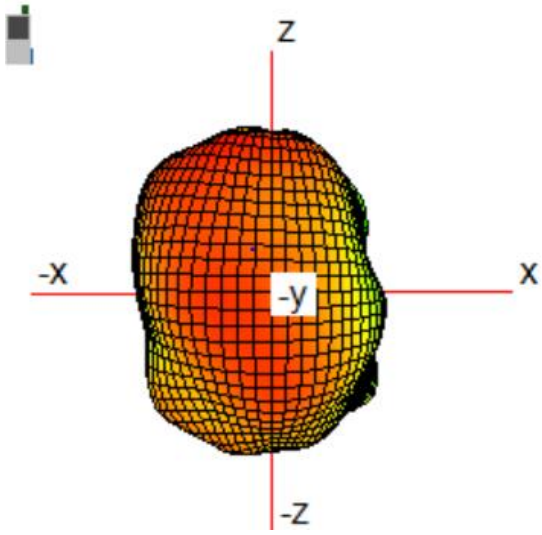
Data points taken every 15 degrees in the theta and in the phi axes are deemed sufficient to fully characterize the EUT's Far-Field radiation pattern and total radiated power All of the measured power values will be integrated

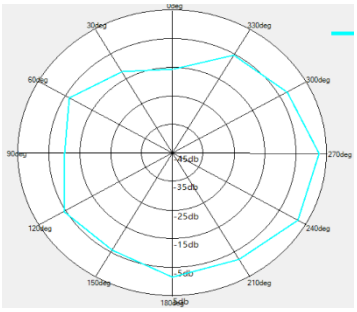
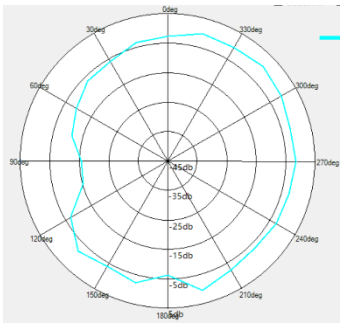
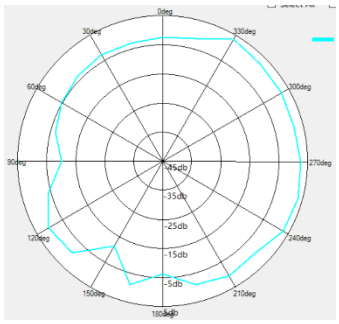
8. Measured Values and Calculation of Correlated Gains

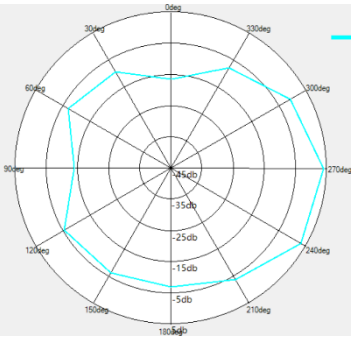
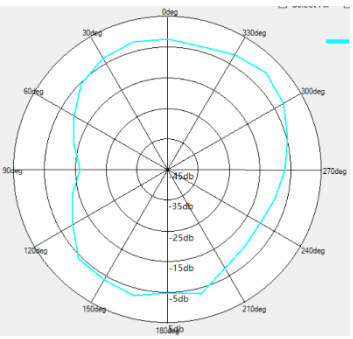
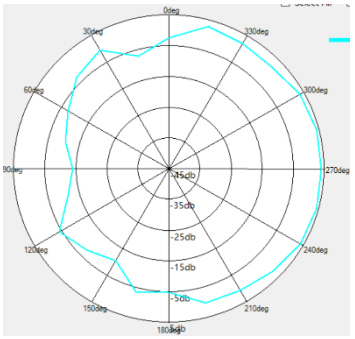
Antenna Peak Gain Table (Ant. Position： BT Antenna)

Band (MHz)	2400-2485	
Freq (MHz)	2400	2485
Max Gain (dBi)	4	4.1

9. Radiation Pattern

BT Ant (3D)	
Freq (MHz)	
2400	2485
	

Freq (MHz)	BT Ant (2D)		
	X_Y	X_Z	Y_Z
2400			

2480			

Appendix A_Radiated Total Gain Result

2400MHz													
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-2.35	-3.23	-5.64	-6.41	-9.02	-11.09	-15.50	-15.20	-6.81	-1.81	-3.77	-2.21	-6.31
15	-2.06	-5.22	-7.84	-5.39	-6.99	-14.03	-13.75	-12.04	-5.34	-2.68	-4.07	-2.04	-6.31
30	-1.76	-7.21	-10.03	-4.36	-4.95	-16.96	-11.99	-8.87	-3.86	-3.54	-4.36	-1.86	-6.31
45	-1.89	-5.41	-7.14	-4.46	-6.91	-11.77	-9.13	-6.78	-4.84	-5.82	-5.77	-1.64	-6.31
60	-2.01	-3.61	-4.24	-4.56	-8.86	-6.58	-6.27	-4.68	-5.82	-8.10	-7.18	-1.41	-6.31
75	-2.14	-3.17	-3.38	-3.96	-6.62	-6.50	-8.13	-4.35	-2.59	-4.40	-9.35	-1.22	-6.31
90	-2.27	-2.73	-2.51	-3.36	-4.38	-6.41	-9.99	-4.01	0.64	-0.69	-11.51	-1.02	-6.31
105	-2.13	-3.37	-1.67	-3.80	-5.19	-5.88	-7.10	-3.13	-0.09	-2.47	-8.56	-0.05	-6.31
120	-1.99	-4.01	-0.83	-4.24	-6.00	-5.34	-4.20	-2.24	-0.82	-4.24	-5.61	0.93	-6.31
135	-1.82	-3.92	-1.60	-2.15	-3.38	-4.82	-4.99	-4.27	-3.48	-4.65	-3.09	1.52	-6.31
150	-1.64	-3.83	-2.36	-0.05	-0.75	-4.30	-5.77	-6.29	-6.14	-5.06	-0.57	2.10	-6.31
165	-1.83	-1.87	-1.29	0.27	-0.70	-3.17	-3.66	-4.39	-4.38	-4.23	-1.37	1.24	-6.31
180	-2.01	0.09	-0.22	0.59	-0.64	-2.04	-1.55	-2.48	-2.61	-3.40	-2.16	0.38	-6.31
195	-2.21	-0.27	-0.30	0.76	0.32	-1.10	-1.77	-2.16	-0.60	-1.38	-3.10	-2.97	-6.31
210	-2.41	-0.63	-0.38	0.92	1.28	-0.15	-1.99	-1.84	1.42	0.65	-4.04	-6.31	-6.31
225	-2.06	-1.12	1.80	2.18	2.38	1.19	-0.03	-0.31	0.47	0.52	-0.98	-5.00	-6.31
240	-1.70	-1.61	4.00	3.44	3.48	2.52	1.94	1.22	-0.49	0.38	2.08	-3.69	-6.31
255	-1.89	-1.38	3.79	2.90	2.89	2.12	2.24	2.23	1.22	0.08	1.30	-2.43	-6.31
270	-2.08	-1.15	3.59	2.35	2.29	1.71	2.54	3.24	2.93	-0.23	0.52	-1.17	-6.31
285	-2.13	-1.54	1.73	0.25	-0.37	-0.33	0.22	0.89	0.32	-1.27	0.63	-1.88	-6.31
300	-2.17	-1.93	-0.14	-1.85	-3.03	-2.36	-2.11	-1.47	-2.29	-2.31	0.74	-2.59	-6.31
315	-2.13	-2.06	-3.16	-4.05	-6.65	-5.73	-3.64	-2.91	-3.52	-2.49	-1.73	-3.22	-6.31
330	-2.08	-2.19	-6.17	-6.24	-10.26	-9.10	-5.17	-4.34	-4.75	-2.67	-4.20	-3.85	-6.31
345	-2.22	-2.71	-5.91	-6.33	-9.64	-10.10	-10.34	-9.77	-5.78	-2.24	-3.99	-3.03	-6.31

360	-2.35	-3.23	-5.64	-6.41	-9.02	-11.09	-15.50	-15.20	-6.81	-1.81	-3.77	-2.21	-6.31

2485MHz													
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-2.23	-1.53	-2.70	-5.08	-9.67	-13.34	-16.30	-12.69	-9.28	-3.95	-3.39	-2.35	-4.71
15	-2.59	-2.03	-3.99	-5.70	-10.58	-12.90	-12.76	-11.94	-9.22	-5.08	-4.79	-2.72	-4.71
30	-2.94	-2.52	-5.27	-6.32	-11.48	-12.46	-9.22	-11.19	-9.16	-6.20	-6.18	-3.08	-4.71
45	-2.75	-4.57	-3.39	-5.01	-9.51	-10.27	-7.93	-9.78	-8.19	-6.81	-6.61	-3.40	-4.71
60	-2.56	-6.61	-1.50	-3.70	-7.54	-8.07	-6.63	-8.36	-7.21	-7.41	-7.04	-3.72	-4.71
75	-2.41	-6.72	-0.85	-3.16	-7.43	-9.15	-10.18	-9.77	-5.56	-7.50	-8.72	-3.59	-4.71
90	-2.25	-6.82	-0.19	-2.61	-7.31	-10.23	-13.72	-11.18	-3.91	-7.58	-10.39	-3.46	-4.71
105	-2.49	-6.09	-1.06	-2.15	-6.69	-8.83	-9.45	-8.35	-4.79	-7.62	-10.01	-2.90	-4.71
120	-2.73	-5.36	-1.92	-1.68	-6.07	-7.43	-5.18	-5.52	-5.67	-7.65	-9.62	-2.33	-4.71
135	-2.83	-2.89	-1.76	-1.91	-4.84	-6.04	-5.67	-5.55	-6.61	-7.04	-6.18	-1.99	-4.71
150	-2.93	-0.41	-1.59	-2.14	-3.60	-4.65	-6.16	-5.58	-7.55	-6.43	-2.73	-1.64	-4.71
165	-2.90	-1.81	-1.51	-1.02	-2.61	-4.62	-6.55	-7.20	-8.92	-8.04	-5.31	-2.36	-4.71
180	-2.86	-3.20	-1.43	0.11	-1.61	-4.59	-6.93	-8.81	-10.28	-9.64	-7.89	-3.07	-4.71
195	-2.85	-2.21	0.72	1.27	-0.24	-3.05	-5.34	-6.61	-6.22	-4.63	-4.63	-3.89	-4.71
210	-2.83	-1.21	2.87	2.43	1.13	-1.50	-3.75	-4.40	-2.16	0.38	-1.37	-4.71	-4.71
225	-2.85	0.88	3.09	2.73	2.11	0.90	-0.29	-1.03	-0.48	0.29	0.00	-2.81	-4.71
240	-2.86	2.96	3.31	3.03	3.09	3.30	3.18	2.34	1.20	0.20	1.37	-0.91	-4.71
255	-2.85	3.05	2.79	2.39	3.37	3.75	3.66	3.24	2.51	1.18	1.08	-0.39	-4.71
270	-2.84	3.14	2.26	1.75	3.64	4.10	4.06	4.05	3.82	2.16	0.78	0.14	-4.71
285	-2.94	2.01	1.68	0.87	1.32	1.35	1.70	2.09	2.18	1.13	0.32	-0.04	-4.71
300	-3.04	0.88	1.09	-0.02	-1.01	-1.50	-0.74	0.05	0.54	0.09	-0.15	-0.21	-4.71
315	-2.77	-1.12	-0.34	-1.95	-3.50	-4.68	-4.26	-3.20	-2.77	-1.79	-1.40	-1.19	-4.71
330	-2.50	-3.12	-1.76	-3.87	-5.99	-7.86	-7.78	-6.44	-6.08	-3.67	-2.64	-2.17	-4.71
345	-2.37	-2.33	-2.23	-4.48	-7.83	-10.60	-12.04	-9.57	-7.68	-3.81	-3.02	-2.26	-4.71
360	-2.23	-1.53	-2.70	-5.08	-9.67	-13.34	-16.30	-12.69	-9.28	-3.95	-3.39	-2.35	-4.71

Appendix B_Setup Photo