

PRODUCT SPECIFICATION

Model	Description
AIR-R58A_ANT	IEEE802.15.4

APPROVAL	REMARK	APPENDIX

DESIGNED	CHECKED	APPROVED
2023.11.01	2023.11.01	2023.11.01
K.S.AN	J.B.KIM	I.U.KIM

ANTENNA SPECIFICATION

1. Model : AIR-R58A_ANT
2. Application : 2.4GHz IEEE802.15.4 compliant RF Transceiver
3. Electrical specification and performance

ELECTRICAL DATA	SPECIFICATIONS		REMARK
FREQUENCY RANGE	2405 ~ 2480 MHz		
IMPEDANCE	50 Ω NOMINAL		
V. S. W. R	2405 ~ 2480 MHz	Less than 2.0 : 1	#1. Attached
PEAK GAIN(Min)	2405 ~ 2480 MHz	-0.23 dBi	#2. Attached

4. Hardware specification and mechanical

MECHANICAL	SPECIFICATIONS		REMARK
Dimension	3.7mm x 18.0mm		#3. Attached

5. Company information

ATEC IoT Co.,Ltd. 289, Pangyo-ro, Bundan-gu, Seongnam-si, Gyeonggi, Republic of Korea TEL : +82-31-696-9815 PAX : +82-31-696-9899

6. OPERATING TEMPERATURE

Temperature : - 20°C / + 60°C
Demands : Set Antenna for 48 hours each temperature.
No visual and mechanical changes.
Unchanged mechanically during the test.
The antenna shall satisfy the electrical data

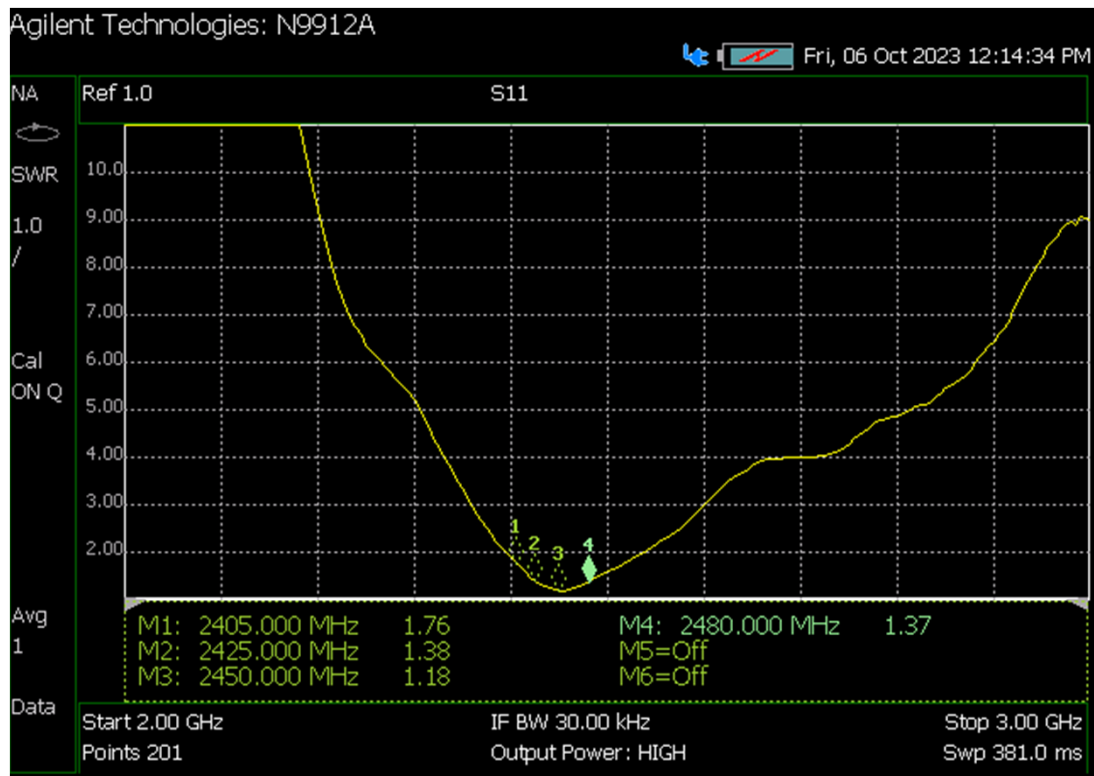
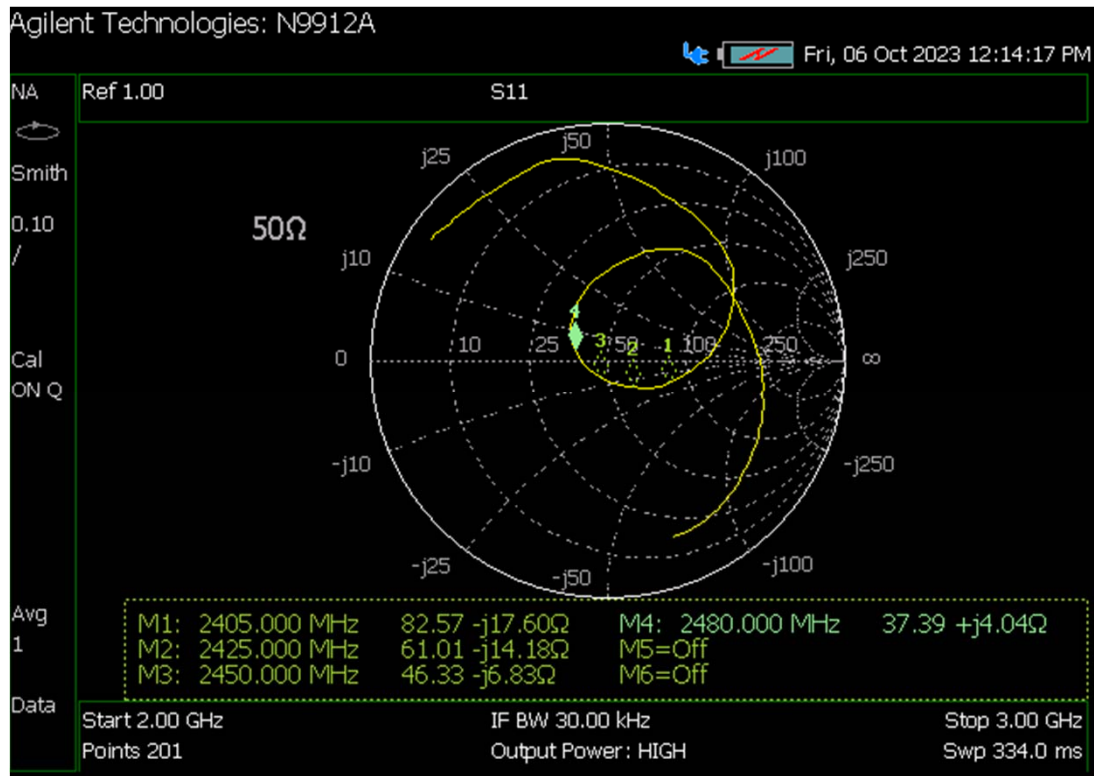
7. HUMIDITY Condition

Condition : 80% / +30°C ~ +50 °C
Measuring method
Antenna is placed in climatic chamber for 48 hours.
Antenna is taken out from the chamber and measured
after another 24 hours in room temperature
Demands : No visual and mechanical changes.
Unchanged mechanically during the test.
The antenna shall satisfy the electrical data.

8. TEST and Q/C

This specification is according to fixed demands and suitable *ATEC IoT* Q/C provision.

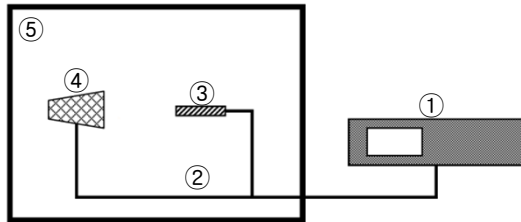
#1. Attached: VSWR



#2. Attached

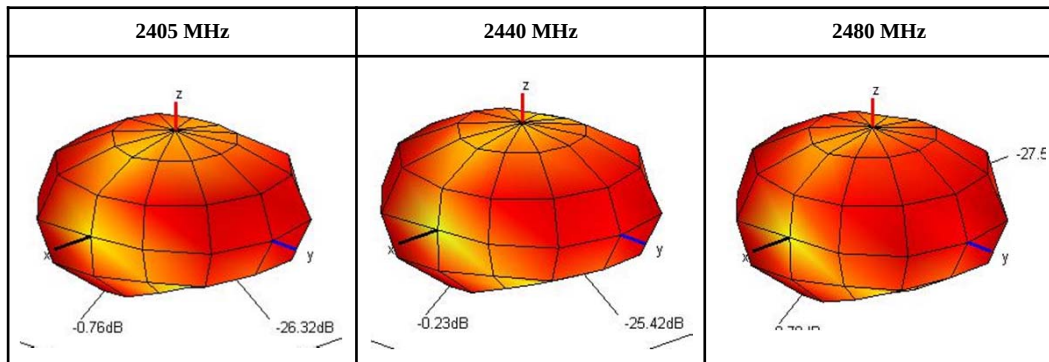
▪ Radiation Pattern and Gain

TEST METHOD



- ① Network Analyzer
- ② Signal Interface : Coaxial Cable
- ③ Test PCB Antenna
- ④ Dual Polarized Antenna
- ⑤ Shield Room

Radiation Pattern



Efficiency

Frequency [MHz]	2405	2410	2415	2420	2425	2430	2435	2440	2445	2450	2455	2460	2465	2470	2475	2480
Efficiency [dB]	-4.48	-4.39	-4.24	-4.20	-4.03	-3.94	-3.91	-3.84	-3.93	-4.09	-4.08	-4.22	-4.30	-4.15	-4.17	-4.24
Efficiency [%]	35.7	36.4	37.7	38.0	39.6	40.4	40.7	41.3	40.5	39.0	39.0	37.8	37.2	38.5	38.2	37.6
Peak Gain [dB]	-0.76	-0.70	-0.56	-0.53	-0.38	-0.30	-0.29	-0.23	-0.33	-0.50	-0.54	-0.71	-0.81	-0.65	-0.75	-0.78
Directivity [dB]	3.72	3.70	3.68	3.68	3.65	3.64	3.61	3.61	3.59	3.58	3.55	3.52	3.49	3.49	3.43	3.46
Minimum Gain [dB]	-12.61	-12.76	-12.66	-12.86	-12.77	-12.62	-12.52	-12.31	-12.32	-12.27	-12.76	-13.17	-13.82	-13.66	-13.74	-13.61

Frequency(MHz)	2405	2440	2480	Avg.	Eff. [%]
Efficiency(dB)	-4.48	-4.20	-4.24	-4.19	38.07

#3. Attached: Drawing paper

