

# PRODUCT SPECIFICATION

Model	Description
<b>AIR-R29A_ANT</b>	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



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## ANTENNA SPECIFICATION

1. Model : AIR-R29A\_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 $\Omega$ NOMINAL		
V. S. W. R	2405 ~ 2480 MHz	Less than 2.0 : 1	#1. Attached
PEAK GAIN(Min)	2405 ~ 2480 MHz	0.29 dBi	#2. Attached

4. Hardware specification and mechanical

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

5. Company information

<p style="text-align: center;"><b>ATEC IoT Co.,Ltd.</b> 289, Pangyo-ro, Bundan-gu, Seongnam-si, Gyeonggi, Republic of Korea TEL : +82-31-696-9815 PAX : +82-31-696-9899</p>
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## 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

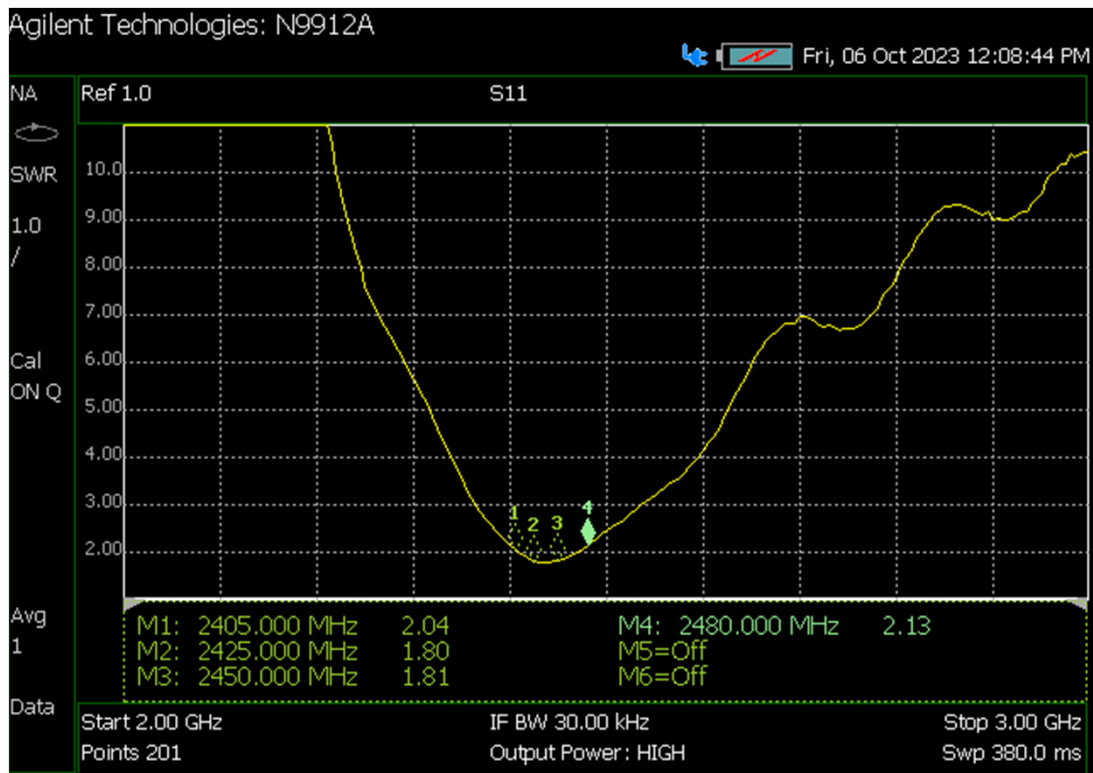
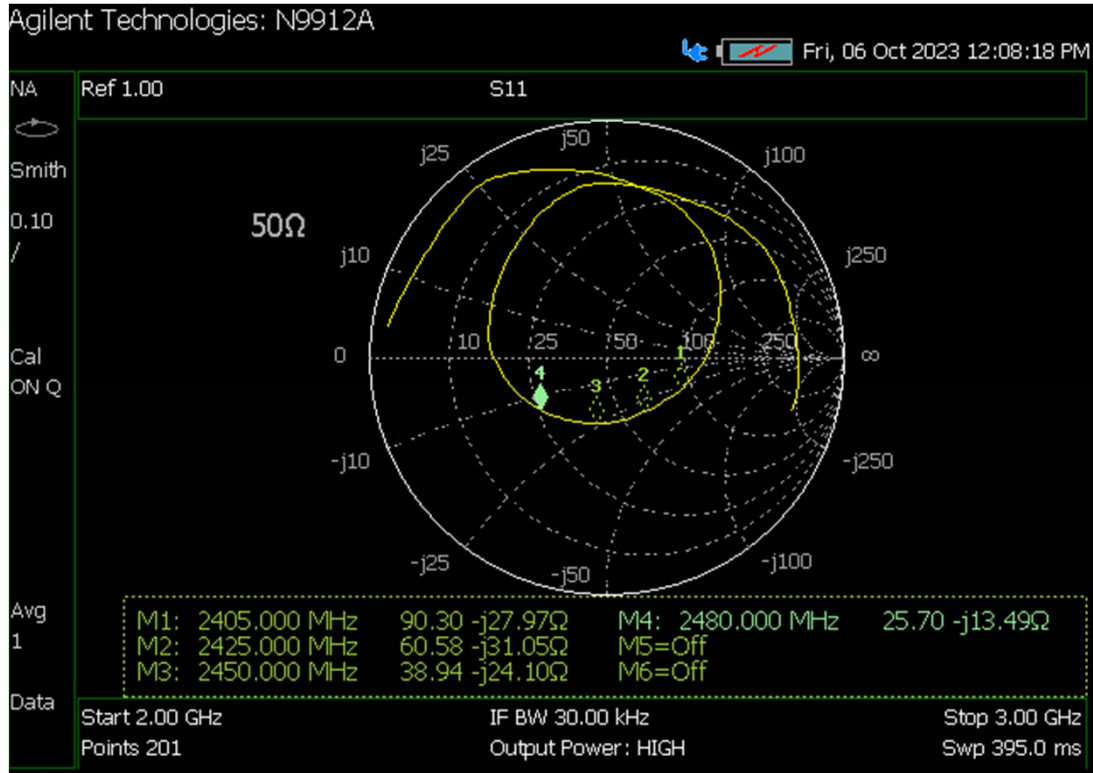
## 7. HUMIDITY Condition

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

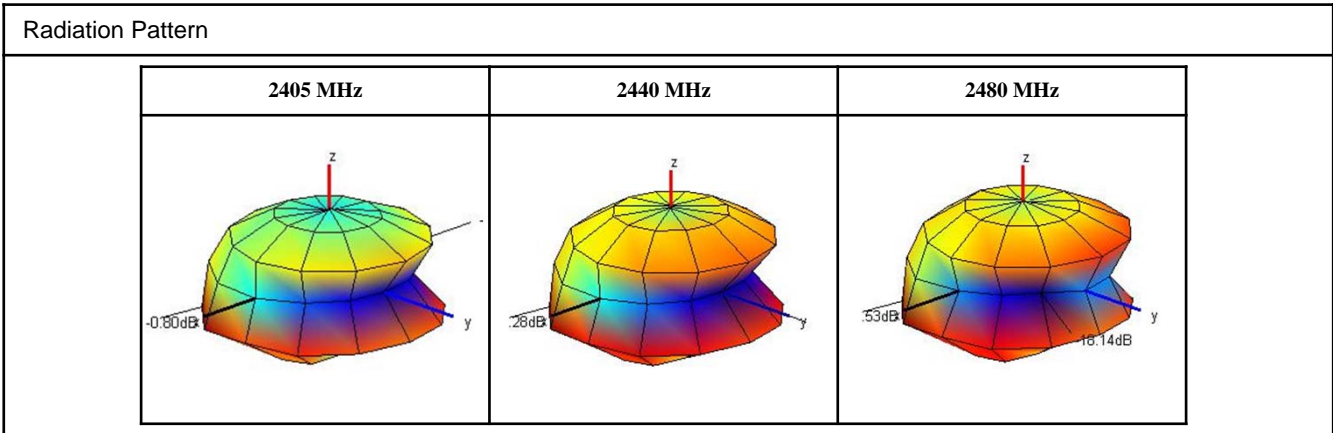
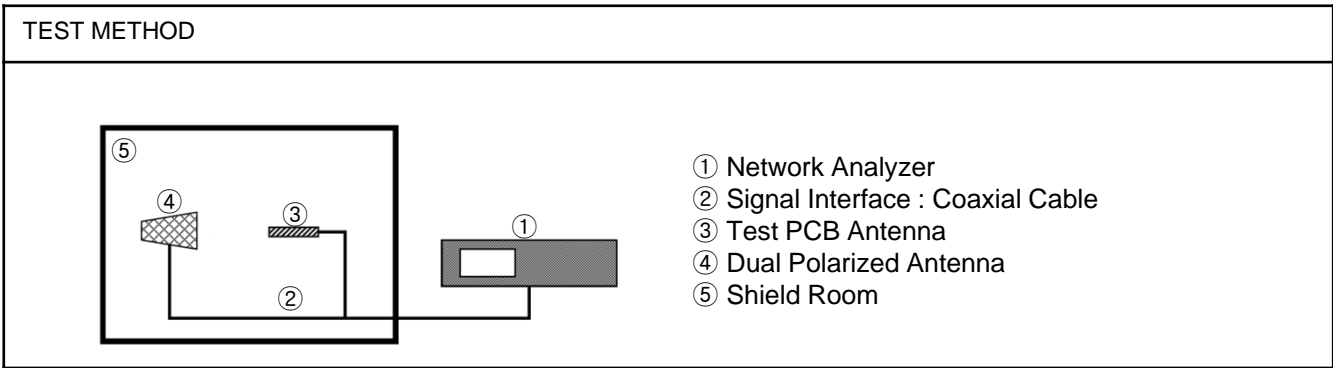
This specification is according to fixed demands and suitable *ATEC IoT* Q/C provision.

#1. Attached: VSWR



#2. Attached

▪ Radiation Pattern and Gain



Efficiency

Frequency [MHz]	2405	2410	2415	2420	2425	2430	2435	2440	2445	2450	2455	2460	2465	2470	2475	2480
Efficiency [dB]	-5.36	-5.27	-5.16	-5.11	-4.93	-4.95	-4.92	-4.93	-5.06	-5.23	-5.38	-5.59	-5.91	-5.76	-5.95	-5.90
Efficiency [%]	29.1	29.7	30.5	30.8	32.2	32.0	32.2	32.1	31.2	30.0	29.0	27.6	25.7	26.6	25.4	25.7
Peak Gain [dB]	-0.15	-0.03	0.09	0.14	0.29	0.25	0.28	0.26	0.07	-0.13	-0.36	-0.64	-1.00	-0.90	-1.15	-1.16
Directivity [dB]	5.22	5.25	5.25	5.25	5.22	5.20	5.20	5.19	5.13	5.10	5.02	4.95	4.91	4.86	4.79	4.75
Minimum Gain [dB]	-15.26	-15.32	-15.70	-16.48	-17.17	-17.97	-18.53	-18.67	-18.31	-18.29	-18.69	-19.03	-18.92	-19.02	-18.81	-18.39

Frequency(MHz)	2405	2440	2480	Avg.	Eff. [%]
Efficiency(dB)	-5.36	-4.93	-5.90	-5.42	28.72

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#3. Attached: Drawing paper

