TEST REPORT

Report No.		ICRT-TR-E242770-0A
Client	Name	Ace Antenna Corp.
	Address	237, Namdongseo-ro, Namdong-gu, Incheon, 21634, Korea
Product name		WCWM / WiFi Module
Model name		AVG-00011
Voltages		DC 5.0 V
Place of test		■ Inside test ☐ Field test Address: 112, 113 Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea
Date of test		20. Sep. 2024 ~ 04. Oct. 2024
Test Method/Item		FCC rule part 1.1310
Test Results		Refer to 4. RF Exposure
Affirmation	Tested by	Si-Yeon, Hwang (Signature)
	Technical Manager	Tae-Yang, Yoon (Signature)

☐ **The above test report is certified that the above mentioned products have been tested for the sample.**

☐ **The above test report is not related to accreditation by KS Q ISO/IEC 17025 and Korea Laboratory Accreditation scheme.**

☐ **The test report is prohibited for some reproduction without the approval of the ICR.**

2024. 10. 15

INTERNATIONAL CERTIFICATION REGISTRAR

The authenticity of the test report can be checked on the G4B or ICR website.

112, Hwanggeum3-ro 7beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea / Tel: 02-6351-9001 ~ 6

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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
ICRT-TR-E242770-0A	2024. 10. 15	Initial Issue	All

1. Applicant & Manufacturer & Test Laboratory Information

1.1 Applicant information

Applicant	Ace Antenna Corp.
Address	237, Namdongseo-ro, Namdong-gu, Incheon, 21634, Korea

1.2 Manufacturer Information

Applicant	Ace Antenna Corp.
Address	237, Namdongseo-ro, Namdong-gu, Incheon, 21634, Korea

1.3 Test Laboratory Information

Laboratory	ICR Co., Ltd.
Address	112, Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea
Telephone No.	+82-2-6351-9002
Fax No.	+82-2-6351-9007
KOLAS No.	KT652
KC & FCC	KR0165

1.4 Measurement Uncertainty

Parameter	Uncertainty for ICR	Limit
Occupied Channel Bandwidth	0.19%	±5 %
RF output power, conducted	0.90 dB	±1.5 dB
Power Spectral Density, conducted	1.51 dB	±3 dB
Unwanted Emissions, conducted	1.36 dB	±3 dB
Supply voltages	0.02%	±3 %
Time	0.58%	±5 %
All emissions, radiated (Under the 1 ㎓)	3.22 dB	±6 dB
All emissions, radiated (Above the 1 ㎓)	3.67 dB	±6 dB

2. Equipment under Test(EUT) Information

2.1 General Information

Product Name	WCWM / WiFi Module
Model Name	AVG-00011
Additional Model Name	-
FCC ID	2A3SR-AVG-00011
Power Supply	DC 5.0 V
Hardware Version	1.0
Software Version	1.0

2.2 Additional Information

Equipment Class	DTS-Digital Transmission System	
Device Type	Stand-alone	
Operating Frequency	802.11n(HT20)	2 412 ㎒ ~ 2 462 ㎒
RF Output Power	802.11n(HT20)	21.58 ㏈m
Number of Channel	802.11n(HT20)	11
Modulation Type	OFDM	
Antenna Type	Planar Invert F Antenna	
Antenna Gain	1.98 ㏈i	

3. Test Summary

3.1 Test standards and results

FCC rule part 1.1310			
Clause	Test items	Applied	Results
FCC rule part 1.1310	Radiofrequency radiation exposure.	■	PASS

4. Result

4.1 RF Exposure

4.1.1 Regulation

FCC rule part 1.1310(d)

(1) Evaluation with respect to the SAR limits in this section must demonstrate compliance with both the whole-body and peak spatial-average limits using technically supported measurement or computational methods and exposure conditions in advance of authorization (licensing or equipment certification) and in a manner that facilitates independent assessment and, if appropriate, enforcement. Numerical computation of SAR must be supported by adequate documentation showing that the numerical method as implemented in the computational software has been fully validated; in addition, the equipment under test and exposure conditions must be modeled according to protocols established by FCC-accepted numerical computation standards or available FCC procedures for the specific computational method.

(2) For operations within the frequency range of 300 kHz and 6 GHz (inclusive), the limits for maximum permissible exposure (MPE), derived from whole-body SAR limits and listed in Table 1 in paragraph (e)(1) of this section, may be used instead of whole-body SAR limits as set forth in paragraphs (a) through (c) of this section to evaluate the environmental impact of human exposure to RF radiation as specified in § 1.1307(b) of this part, except for portable devices as defined in § 2.1093 of this chapter as these evaluations shall be performed according to the SAR provisions in § 2.1093.

4.1.2 Evaluation Method

OET Bulletin 65 Section 2: PREDICTION METHODS_Equations for Predicting RF Fields

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm2)
P = power input to the antenna (in appropriate units, e.g., mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

$$S = \frac{EIRP}{4\pi R^2}$$

EIRP = equivalent (or effective) isotropically radiated power

4.1.3 Limit

Table 1 to § 1.1310(e)(1)—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3–3.0	614	1.63	*(100)	≤6
3.0–30	1842/f	4.89/f	*($900/f^2$)	<6
30–300	61.4	0.163	1.0	<6
300–1,500			f/300	<6
1,500–100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	<30
1.34–30	824/f	2.19/f	*($180/f^2$)	<30
30–300	27.5	0.073	0.2	<30
300–1,500			f/1500	<30
1,500–100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

4.1.4 Result

Mode	Frequency [㎒]	Max Power / tolerance [dBm]	Max Tune-up Power [dBm]	Ant Gain [dBi]	Power density at 20 ㎝ [㎽/㎠]	Limit [㎽/㎠]
802.11n (HT20)	2 437	21.58 ± 1.0	22.58	1.98	0.056 85	1.00

S(power density [mW/cm^2]) = 10^{(Max Tune-up Power [dBm]+Ant Gain [dBi])/10} / (4 x π x R^2)

- END OF REPORT -