

Report No: CCISE191108004

FCC&IC REPORT

Applicant:	AceAge Inc.				
Address of Applicant:	26 Ontario Street, Suite 109 Guelph, Ontario, Canada N1E7K1				
Equipment Under Test (E	EUT)				
Product Name:	Karie Connectivity Module				
Model No.:	AceAge1A, AceAge1B, AceAge1C, AceAge1D, AceAge2A, AceAge2B, AceAge2C, AceAge2D				
Trade mark:	AceAge				
FCC ID:	2AQKR-P001R1				
Canada IC:	24087-P001R1				
Applicable standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407 RSS-Gen Issue 5 March 2019 Amendment 1 RSS-247 Issue 2, February 2017				
Date of sample receipt:	12 Nov., 2019				
Date of Test:	13 Nov., to 22 Nov., 2019				
Date of report issued:	10 Dec., 2019				
Test Result:	PASS*				

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



2 Version

Version No.	Date	Description			
00	10 Dec., 2019	Original			
Remark: This report was amended on FCC ID: 2AQKR-P001R1 follow FCC Class II Permissive Change. The differences between them as below: Update DDR SDRAM and Flash Memory merchants, update Power connector and power cable, added model AceAge1B, AceAge1C, AceAge1D, AceAge2A, AceAge2B, AceAge2C, AceAge2D. So Radiated Emission Below 1GHz has been retested.					

Tested by:

Mike.ou Date:

25 Jul., 2018

Test Engineer

Reviewed by:

Wimer han J

Date:

25 Jul., 2018

Project Engineer



3 Contents

		Page
1	COVER PAGE	1
2	VERSION	2
3	CONTENTS	
4	TEST SUMMARY	
	GENERAL INFORMATION	
5	GENERAL INFORMATION	
5.1	•===	
5.2		-
5.3		
5.4		
5.5		-
5.6		
5.7		
5.8		
5.9	TEST INSTRUMENTS LIST	9
6	TEST RESULTS AND MEASUREMENT DATA	10
6.1	ANTENNA REQUIREMENT	10
6.2		11
6.3		
6.4		13
6.5		
6.6		
	6.6.1 Restricted Band	
	6.6.2 Unwanted Emissions out of the Restricted Bands	-
6.7	7 FREQUENCY STABILITY	23
7	TEST SETUP PHOTO	24
8	EUT CONSTRUCTIONAL DETAILS	25



4 Test Summary

Test Item	Section in CFR 47	Section in CFR 47	Test Result	
Antenna requirement	15.203 & 15.407 (a)	/	Pass	
AC Power Line Conducted Emission	15.207	RSS-GEN Section 8.8	N/A	
Conducted Peak Output Power	15.407 (a) (1) (iv)	RSS-247 Section 6.2.1.1	Pass*	
99% Occupied Bandwidth	15 407 (o) (5)	RSS-247 Section 6.2.1.1	Pass*	
26dB Occupied Bandwidth	15.407 (a) (5)	RSS-247 Section 6.2.1.2	Fass	
Power Spectral Density	15.407 (a) (1) (iv)	RSS-247 Section 6.2.1.1	Pass*	
Pond Edgo	45 407(h)	RSS-GEN Section 8.10	Pass*	
Band Edge	15.407(b)	RSS-247 Section 6.2.1.2	Fass	
Spurious Emission		RSS-GEN Section 6.13	Pass	
Spullous Emission	15.407 (b) & 15.205 & 15.209	RSS-247 Section 6.2.1.2	F 455	
Frequency Stability 15.407(g)		RSS-Gen section 6.13	Pass*	
Pass: The EUT complies with the essential requirements in the standard. Pass*: please refer to the FCC ID: 2AQKR-P001R1 N/A: N/A: Not Applicable.				



5 General Information

5.1 Client Information

Applicant:	AceAge Inc.
Address:	26 Ontario Street, Suite 109 Guelph, Ontario, Canada N1E7K1
Manufacturer	AceAge Inc.
Address:	26 Ontario Street, Suite 109 Guelph, Ontario, Canada N1E7K1

5.2 General Description of E.U.T.

Product Name:	Karie Connectivity Module		
Model No.:	AceAge1A, AceAge1B, AceAge1C, AceAge1D, AceAge2A, AceAge2B, AceAge2C, AceAge2D		
Operation Frequency:	Band 1: 5150MHz-5250MHz		
Channel numbers:	Band 1: 802.11a/802.11n20: 4, 802.11n40: 2,		
Channel separation:	802.11a/802.11n-HT20: 20MHz, 802.11n-HT40: 40MHz		
Modulation technology (IEEE 802.11a):	BPSK, QPSK, 16-QAM, 64-QAM		
Modulation technology (IEEE 802.11n):	BPSK, QPSK, 16-QAM, 64-QAM		
Data speed (IEEE 802.11a):	6Mbps, 9Mbps,12Mbps,18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps		
Data speed (IEEE 802.11n-HT20):	MCS0: 6.5Mbps, MCS1:13Mbps,MCS2:19.5Mbps, MCS3:26Mbps, MCS4:39Mbps, MCS5:52Mbps, MCS6:58.5Mbps, MCS7:65Mbps		
Data speed (IEEE 802.11n-HT40):	MCS0:15Mbps, MCS1:30Mbps, MCS2:45Mbps, MCS3:60Mbps, MCS4:90Mbps, MCS5:120Mbps, MCS6:135Mbps, MCS7:150Mbps		
Antenna Type:	Internal Antenna		
Antenna gain:	0.53 dBi		
Power supply:	DC 4.2V		
Remark:	Model No.: AceAge1A, AceAge1B, AceAge1C, AceAge1D, AceAge2A, AceAge2B, AceAge2C, AceAge2D were identical inside, the electrical circuit design, layout, components used and internal wiring. They only differences is Model Name		



Operation Frequency each of channel							
	Band 1						
802.11a/802	2.11n-HT20	802.	11n-HT40		/		
Channel	Frequency	Channel	Frequency	/ /			
36	5180MHz	38	5190MHz	/	/		
40	5200MHz	46	5230MHz				
44	5220MHz						
48	5240MHz						

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Band 1						
802.11a/802	802.11a/802.11n-HT20 802.11n-HT40 /					
Channel	Frequency	Channel Frequency		/	/	
Lowest channel	5180MHz	Lowest channel	5190MHz	/	/	
Middle channel	5200MHz	Highest channel	5230MHz			
Highest channel	5240MHz					



5.3 Test environment and test mode

Operating Environment:					
Temperature:	24.0 °C	24.0 °C			
Humidity:	54 % RH				
Atmospheric Pressure:	1010 mbar				
Test mode:					
Continuously transmitting mode	Keep the EUT in 100	% duty cycle transmitting with modulation.			
	We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:				
Per-scan all kind of data rate, an	d found the follow lis	t were the worst case.			
Mode		Data rate			
802.11a		6 Mbps			
802.11n-HT20		6.5 Mbps			
802.11n-HT40		13 Mbps			



5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
DELL	PC	OPTIPLEX745	N/A	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC

5.5 Measurement Uncertainty

Parameters	Expanded Uncertainty
Conducted Emission (9kHz ~ 30MHz)	±2.22 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	±2.76 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.32 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.72 dB (k=2)
Radiated Emission (18GHz ~ 40GHz)	±2.88 dB (k=2)

5.6 Related Submittal(s) / Grant (s)

This is an original grant, no related submittals and grants.

5.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

• FCC - Registration No.: CN1211

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.

• IC - Registration No.: CN0021

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

• CNAS - Registration No.: CNAS L6048

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

• A2LA - Registration No.: 4346.01

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <u>https://portal.a2la.org/scopepdf/4346-01.pdf</u>

5.8 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd. Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China Tel: +86-755-23118282, Fax: +86-755-23116366 Email: info@ccis-cb.com, Website: http://www.ccis-cb.com



5.9 Test Instruments list

Radiated Emission:	Radiated Emission:						
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)		
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020		
Loop Antenna	SCHWARZBECK	FMZB1519B	00044	03-18-2019	03-17-2020		
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-18-2019	03-17-2020		
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-18-2019	03-17-2020		
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-22-2017	06-21-2020		
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-21-2018	11-20-2019		
EMI Test Software	AUDIX	E3	V	ersion: 6.110919	b		
Pre-amplifier	HP	8447D	2944A09358	03-18-2019	03-17-2020		
Pre-amplifier	CD	PAP-1G18	11804	03-18-2019	03-17-2020		
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-18-2019	03-17-2020		
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-21-2018	11-20-2019		
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-18-2019	03-17-2020		
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-18-2019	03-17-2020		
Cable	MICRO-COAX	MFR64639	K10742-5	03-18-2019	03-17-2020		
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-18-2019	03-17-2020		
RF Switch Unit	MWRFTEST	MW200	N/A	N/A	N/A		
Test Software	MWRFTEST	MTS8200	Version: 2.0.0.0				

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	03-07-2018	03-06-2019
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-07-2018	03-06-2019
LISN	CHASE	MN2050D	1447	03-19-2018	03-18-2019
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2017	07-20-2018
Cable	HP	10503A	N/A	03-07-2018	03-06-2019
EMI Test Software	AUDIX	E3	6.110919b	N/A	N/A



6 Test results and Measurement Data

6.1 Antenna requirement

Standard requirement:	FCC Part15 E Section 15.203 /407(a)
responsible party shall be us antenna that uses a unique so that a broken antenna ca electrical connector is prohit This requirement does not a of §15.211, § 15.213, § 15.2 intentional radiators that mus some field disturbance sens must be measured at the ins	be designed to ensure that no antenna other than that furnished by the sed with the device. The use of a permanently attached antenna or of an coupling to the intentional radiator, the manufacturer may design the unit n be replaced by the user, but the use of a standard antenna jack or bited. upply to carrier current devices or to devices operated under the provisions 17, § 15.219, or § 15.221. Further, this requirement does not apply to st be professionally installed, such as perimeter protection systems and ors, or to other intentional radiators which, in accordance with § 15.31(d), stallation site. However, the installer shall be responsible for ensuring that yed so that the limits in this part are not exceeded.
E.U.T Antenna:	
antenna is 0.53 dBi.	



6.2 Conducted Output Power

Test Requirement:	FCC Part15 E Section 15.407 (a) (1) (iv), RSS-247 section 6.2.1.1
Test Method:	ANSI C63.10: 2013, KDB789033
Limit:	FCC Band 1: 24dBm IC Band 1: the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz.
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass*, Refer to the FCC ID: 2AQKR-P001R1



6.3 Occupy Bandwidth

Test Requirement: Test Method:	FCC Part15 E Section 15.407 (a) (5) RSS-247 section 6.2.1.1 and section 6.2.1.2 ANSI C63.10:2013 and KDB 789033
Limit:	Band 1: N/A (26dB Emission Bandwidth and 99% Occupy Bandwidth)
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass*, Refer to the FCC ID: 2AQKR-P001R1



6.4 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407 (a) (1) (iv) , RSS-247 section 6.2.1.1
Test Method:	ANSI C63.10:2013, KDB 789033
Limit:	FCC Band 1: 11 dBm/MHz IC Band 1: The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass*, Refer to the FCC ID: 2AQKR-P001R1



6.5 Band Edge

Test Requirement:	FCC Part 15 E Sec	tion 15.407 (b), R	SS-247 section	n 6.2.1.2
Test Method:	ANSI C63.10:2013	, KDB 789033		
Receiver setup:	Detector	RBW	VBW	Remark
	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	RMS	1MHz	3MHz	Average Value
Limit:	Band		ıV/m @3m)	Remark
	Band 1		3.20	Peak Value
		54	.00	Average Value
	Remark:			
	1. Band 1 limit:		2 dBuV/m for El	
Test Procedure:	 The EUT was the ground at to determine the ground at to determine the to determine the enterna, which tower. The EUT was antenna, which tower. The antenna he the ground to Both horizonta make the mea For each susp case and then meters and the to find the max The test-receive Specified Ban If the emission the limit specified of the EUT wo have 10dB max 	a 3 meter camber he position of the set 3 meters awa h was mounted or neight is varied fro determine the ma al and vertical pola surement. nected emission, the the antenna was e rotatable was tu kimum reading. ver system was so dwidth with Maxin n level of the EUT fied, then testing of ould be reported. Co argin would be re-	of a rotating ta The table was highest radiatio y from the intern in the top of a van om one meter to ximum value of arizations of the he EUT was arr tuned to height rned from 0 deg to Peak Dete num Hold Mode in peak mode v could be stoppe Otherwise the ent tested one by o	ble 0.8 meters above a rotated 360 degrees on. ference-receiving ariable-height antenna o four meters above the field strength. antenna are set to ranged to its worst ts from 1 meter to 4 grees to 360 degrees ct Function and
Test setup:		AE EUT (Turntable) Ground R Test Receiver	Horn Antenna Im efference Plane	a Tower
Test Instruments:	Refer to section 5.9	9 for details		
Test mode:	Refer to section 5.3			
Test results:	Pass*, Refer to the	FCC ID: 2AQKR	-P001R1	



6.6 Spurious Emission

6.6.1 Restricted Band

Test Requirement:	FCC Part15 E Se	ection 15.407	(b), RSS-GEN	section 8	3.10
Test Method:	ANSI C63.10: 20)13			
Test Frequency Range:	4.5 GHz to 5.15	GHz and 5.35	GHz to 5.46G	θHz	
Test site:	Measurement Di	stance: 3m	-		
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
Limit:	Frequency	RMS	1MHz it (dBuV/m @:	3MHz	Average Value Remark
Linnt.			74.00		Peak Value
	Above 1GH	z	54.00		Average Value
Test Procedure:	 the ground a to determine 2. The EUT wa antenna, wh tower. 3. The antenna the ground the ground the ground the ground the ground the ground the for each su case and the meters and to find the m 5. The test-recession Specified Ba 6. If the emission the limit specified Ba 	at a 3 meter c e the position as set 3 meter nich was mour a height is var to determine the thal and vertice easurement. spected emission en the antenn the rota table haximum read ceiver system andwidth with ton level of the crified, then te would be report	amber. The ta of the highest is away from t ited on the top ied from one in he maximum is al polarization sion, the EUT a was tuned to was turned from ing. was set to Per Maximum Ho e EUT in peak sting could be inted. Otherwis be re-tested of	able was ro radiation. he interfer of a varia meter to fo value of th as of the ar was arran o heights f om 0 degro ak Detect Id Mode. stopped a se the emisone by one	e 1.5 meters above otated 360 degrees rence-receiving able-height antenna our meters above he field strength. Intenna are set to nged to its worst from 1 meter to 4 rees to 360 degrees Function and as 10dB lower than and the peak values issions that did not e using peak, quasi- eported in a data
Test setup:		AE EUT (Turntable) Tes	Horn Ar Ground Reference Plane t Receiver	Antenna Tow	wer
Test Instruments:	Refer to section	5.9 for details			
Test mode:	Refer to section	5.3 for details			
Test results:	Pass*, Refer to t	he FCC ID: 2/	AQKR-P001R	1	

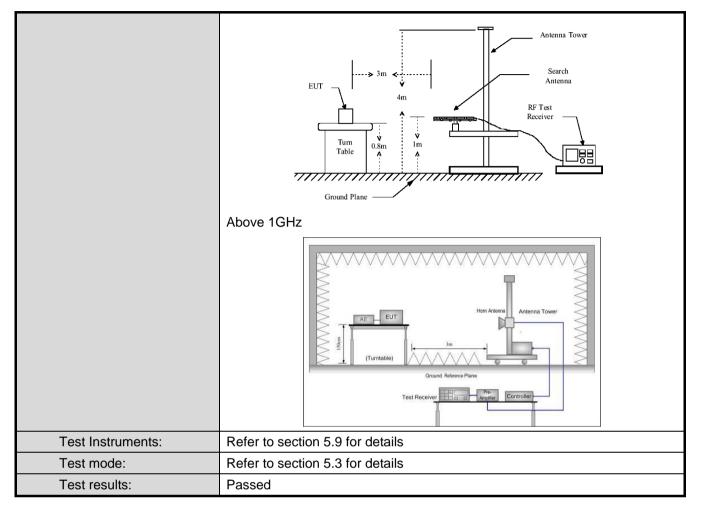


6.6.2 Unwanted Emissions out of the Restricted Bands

Test Requirement:	FCC Part15 C So RSS-Gen section	ection 15	.209 a	and 15.205	6.2.1.2	2	
Test Method:	ANSI C63.10: 20						
Test Frequency Range:	30MHz to 40GHz	<u>z</u>					
Test site:	Measurement Di	stance: 3	m				
Receiver setup:	Frequency	Detec	tor	RBW	VE	3W	Remark
	30MHz-1GHz	Quasi-p	eak	100kHz	300	kHz	Quasi-peak Value
	Above 1GHz	Peal		1MHz		IHz	Peak Value
		RMS		1MHz		IHz	Average Value
Limit:	Frequency 30MHz-88MI		Lin	<u>nit (dBuV/m @3</u> 40.0	m)	0	Remark
	88MHz-216M			40.0			uasi-peak Value uasi-peak Value
	216MHz-960N			46.0			uasi-peak Value
	960MHz-1GI			40.0 54.0			uasi-peak Value
				68.20		3	Peak Value
	Above 1GH	z		54.00			Average Value
Test Procedure:	 1GHz)/1.5m table was ro radiation. The EUT wa antenna, wh tower. The antenna ground to de horizontal a measureme For each su and then the and the rota maximum re The test-reconstruction 	as placed (above 1 itated 360 as set 3 n ich was 1 a height is etermine nd vertica nt. spected of a antenna table wa eading. eiver sys	l on th GHz) 0 degr neters mount s varie the ma al pola emissi a was as turn stem w	e top of a rota above the gro ees to determ away from th ed on the top ed from one m aximum value irizations of th ion, the EUT v tuned to heigh	ting ta ound at ine the e inter of a va eter to of the e ante vas arn nts fror prees to k Dete	ble 0.8 t a 3 m e positi ference ariable o four n field s nna are ranged n 1 me o 360 c ct Fune	em(below eter camber. The on of the highest e-receiving -height antenna neters above the trength. Both e set to make the to its worst case eter to 4 meters degrees to find the
	 If the emissi limit specific EUT would 10dB margin 	on level o ed, then to be report n would b	of the esting ed. Ot be re-to	EUT in peak r could be stop herwise the e	node v ped ar missio one us	was 10 nd the ns that ing pea	ak, quasi-peak or
Test setup:	Below 1GHz						



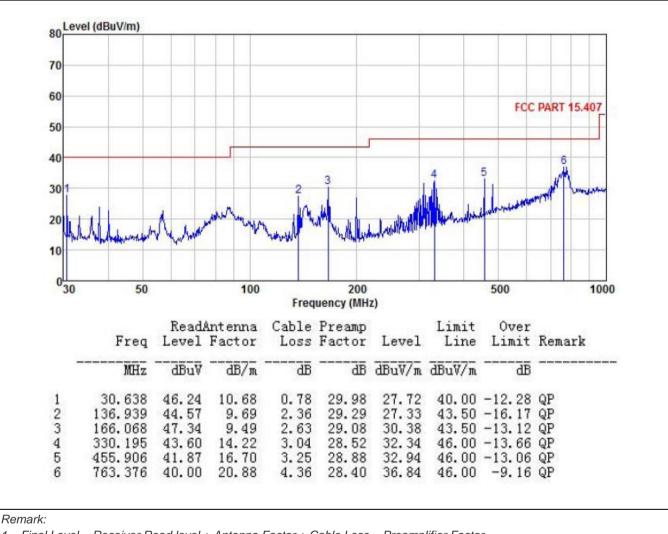
Report No: CCISE191108005





Measurement Data (worst case):

Below 1GHz			
Product Name:	Karie Connectivity Module	Product Model:	AceAge1A
Test By:	Mike	Test mode:	5G WIFI Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24 °C Huni: 57%



1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.





Product Name	: ка	irie Conn	ectivity Mo	odule	Pro	oduct Mo	del:	AceAge	e1A	
Test By:	Mi	ke			Те	st mode:		5G WIF	Tx n	node
Test Frequence	y: 30	MHz ~ 1	GHz		Ро	larizatior	ו:	Horizor	ntal	
Test Voltage:	AC	C 120/60H	Ηz		En	vironme	nt:	Temp: 2	24 ℃	Huni: 57%
80 Leve	l (dBuV/m)									
70										
60	_									
20120								FCC	PART 1	5.407
50										
			-				4		6	
40									1 Mar.	
						3,		5	JM	
40 30					1 2	3	la l	5	MM	hallower
	,			٨		3	Howers	5 Wedgement	minth	hallower
30 20	hanna	Augus	Jun	man	Murula	well have	Homester	5 Water and	M	hallower
30	Announce	Anom	ulunm	man	Mutula	waluhan	Housed	5 Wrdenerwell	M	hallower
30 20 10	January 10	Addison	damma 100	man		3 W	A Hitman and		with	1000
30 20	January 10 50	America	Jun		200 uuency (MH		Himmed	5 web.e	M	1000
30 20 10	Annorman 50	Read		Freq	200 juency (MH			500	M	1000
30 20 10			100 Antenna Factor	Freq	200	z)	Limit		Rema	
30 20 10			Intenna	Freq	200 Juency (MH Preamp Factor	z)	Limit Line	500 Over	Rema	
30 20 10 10 30	Freq	Level dBuV	intenna Factor B/m	Freq Cable Loss dB	200 wency (MH Preamp Factor dB	c) Level dBuV/m	Limit Line dBuV/m	500 Over Limit dB		
30 20 10 10 30	Freq MHz 166.068 218.309	Level dBuV 43.44 41.33	Intenna Factor dB/m 9.49 11.43	Freq Cable Loss dB 2.63 2.85	200 puency (MH Factor 	c) Level dBuV/m 26.48 26.89	Limit Line dBuV/m 43.50 46.00	500 Over Limit 	QP QP	
30 20 10 10 30	Freq MHz 166.068 218.309 294.114	Level dBuV 43.44 41.33 42.33	Antenna Factor dB/m 9.49 11.43 13.52	Freq Cable Loss dB 2.63 2.85 2.92	200 puency (MH) Factor 29.08 28.72 28.46	c) Level dBuV/m 26.48 26.89 30.31	Limit Line dBuV/m 43.50 46.00 46.00	500 Over Limit 	QP QP QP	
30 20 10 10 30	Freq MHz 166.068 218.309 294.114 327.887	Level dBuV 43.44 41.33 42.33 51.33	Antenna Factor dB/m 9.49 11.43 13.52 14.17	Freq Cable Loss dB 2.63 2.85 2.92 3.03	200 puency (MH) Factor 29.08 28.72 28.46 28.51	c) Level dBuV/m 26.48 26.89 30.31 40.02	Limit Line dBuV/m 43.50 46.00 46.00 46.00	500 Over Limit 	QP QP QP QP	
30 20 10 10 30 30	Freq MHz 166.068 218.309 294.114	Level dBuV 43.44 41.33 42.33	Antenna Factor dB/m 9.49 11.43 13.52	Freq Cable Loss dB 2.63 2.85 2.92	200 puency (MH Factor 29.08 28.72 28.46 28.51 28.92	c) Level dBuV/m 26.48 26.89 30.31	Limit Line dBuV/m 43.50 46.00 46.00 46.00 46.00	500 Over Limit 	QP QP QP QP QP QP	

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.





Product Name:	Karie Con	nectivity Mo	odule	Pr	oduct Mo	odel:	AceAg	e1A	
Test By:	Mike			Те	st mode:	:	5G WI	FI Tx n	node
Test Frequency:	30 MHz ~	30 MHz ~ 1 GHz			olarization:		Vertica	ıl	
Test Voltage:	AC 120/6)Hz		Er	vironme	nt:	Temp:	24 °C	Huni: 57%
80 Level (dBu	V/m)								
70									
70									
60							ICES	-003 CL	A C C D
50							ILES-	OUJCL	A33-D
		_							
40							5	6	
				3	1	4	1	1/TA	A
301			2	Ĭ		1			montesting
30 1			2	4	J.		Lunider	ment	township
30 1 20 1	when he has	many	2 M	with with los	- Joseph M	humandow	Warning	wreiten	landiter
	martin	many	how	with the	had an a start of the	1 April 100	Untrainterno	arrell ^{en} 1	Lowerten
20 4 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	have been been been been been been been be	contractory of the second	hand	with the	had and the state	-	Lutominister	arrite	Lowerser
20	human Andrew	100	2 Www.W	200	had an all hall the	- And	6.00		1000
20 4 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	100	1.2.57		quency (MH	z)	Harnadow Trianit			1000
	Read	100 LAntenna Factor	Cable			Limit	500 Over Limit		
	Read	lAntenna Factor	Cable	quency (MH Preamp Factor		Line	Over		
	Read Freq Level MHz dBu	lAntenna 1 Factor 7 dB/m	Cable Loss dB	uency (MH Preamp Factor dB	Level dBuV/m	Line dBuV/m	Over Limit dB	Rema	
	Read Freq Level MHz dBu .638 46.24 .939 44.5	Antenna Factor 1 1 1 1 1 1 1 1 1 2 . 68	Cable Loss dB 0.78 2.36	preamp Factor dB 29.98 29.29	Level dBuV/m 27.72 27.33	Line <u>dBuV/m</u> 40.00 43.50	Over Limit -12.28 -16.17	Rema QP QP	
	Read Freq Level MHz dBu .638 46.24 .939 44.5 .068 47.34	Antenna Factor dB/m 1 10.68 7 9.69 1 9.49	Cable Loss dB 0.78 2.36 2.63	uency (MH Preamp Factor dB 29.98 29.29 29.08	Level dBuV/m 27.72 27.33 30.38	Line dBuV/m 40.00 43.50 43.50	Over Limit -12.28 -16.17 -13.12	Rema QP QP QP	
	Read Freq Level MHz dBu .638 46.24 .939 44.5 .068 47.34 .195 43.60	Antenna Factor dB/m 1 10.68 7 9.69 1 9.49 0 14.22	Cable Loss dB 0.78 2.36 2.63 3.04	uency (MH Preamp Factor dB 29.98 29.29 29.08 28.52	Level dBuV/m 27.72 27.33 30.38 32.34	Line dBuV/m 40.00 43.50 43.50 46.00	Over Limit -12.28 -16.17 -13.12 -13.66	QP QP QP QP QP	
20 10 0 30 1 1 3 1 3 1 6 4 3 5 455	Read Freq Level MHz dBu .638 46.24 .939 44.5 .068 47.34	Antenna Factor dB/m 1 10.68 7 9.69 1 9.49 0 14.22 7 16.70	Cable Loss dB 0.78 2.36 2.63	uency (MH Preamp Factor dB 29.98 29.29 29.08 28.52 28.88	Level dBuV/m 27.72 27.33 30.38 32.34 32.94	Line dBuV/m 40.00 43.50 43.50	Over Limit dB -12.28 -16.17 -13.12 -13.66 -13.06	QP QP QP QP QP QP QP	



Product Name	: Ka	rie Conn	ectivity Mo	odule	Pr	oduct Mo	odel:	AceAg	e1A		
Test By:	Mi	ĸe			Те	st mode:	:	5G WI	FI Tx	(mo	de
Test Frequenc	y: 30	MHz ~ 1	GHz		Po	larizatio	n:	Horizo	ntal		
Test Voltage:	AC	120/60	Ηz		En	vironme	nt:	Temp:	24 °C	2	Huni: 57%
80 Level	(dBuV/m)						Ĩ			1	
70											
82244 											
60								ICES	-003	CLAS	S-B
50											
						1	4			6	
40										4	
40					_	2		-		-	
40 30					1	2 3		5	AN AN		horn
30				٨		2 3	-	5	ANAL		hour
30 20	-	Antonio	dunm	man	Muhalo	2 4	11 House	5	MAN		hour
30	bourserview	Antonio	dum	munt	Muhali	2 	11 House	5 Wultham	AN AN		hor
30 20 10	50	Amore	era ar	human			H Human	5 Www.mm	ANN		1000
30 20	50	America	Jun		200 Juency (MH			5 Werds 14 mm	MAN		1000
30 20 10	50	Read	era ar	Free	200 Juency (MH		Limit	5 5 500 Over	AN AN		1000
30 20 10			100	Free	200	z)	Limit			nark	
30 20 10			100 Antenna	Free	200 quency (MH Preamp Factor	z)	Line	Over		hark	
30 20 10 10 30	Freq	Level dBuV	100 Antenna Factor dB/m	Free Cable Loss dB	200 juency (MH Preamp Factor dB	z) Level dBuV/m	Line dBuV/m	Over Limit dB	Rem	hark	
30 20 10 10 30	Freq MHz 166.068 218.309	Level dBuV 43.44 41.33	100 Antenna Factor dB/m 9.49 11.43	Free Cable Loss dB 2.63 2.85	200 Juency (MH Preamp Factor dB 29.08 28.72	z) Level dBuV/m 26.48 26.89	Line dBuV/m 43.50 46.00	Over Limit -17.02 -19.11	Rem QP QP	nark	
30 20 10 10 30	Freq MHz 166.068 218.309 294.114	Level dBuV 43.44 41.33 42.33	100 Antenna Factor dB/m 9.49 11.43 13.52	Free Cable Loss dB 2.63 2.85 2.92	200 juency (MH Preamp Factor dB 29.08 28.72 28.46	z) Level dBuV/m 26.48 26.89 30.31	Line dBuV/m 43.50 46.00 46.00	Over Limit dB -17.02 -19.11 -15.69	QP QP QP	mark	
30 20 10 0 30 	Freq MHz 166.068 218.309	Level dBuV 43.44 41.33	100 Antenna Factor dB/m 9.49 11.43	Free Cable Loss dB 2.63 2.85	200 juency (MH Preamp Factor 	z) Level dBuV/m 26.48 26.89 30.31 40.02	Line dBuV/m 43.50 46.00 46.00 46.00	Over Limit dB -17.02 -19.11 -15.69	QP QP QP QP	nark	

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.



Above 1GHz:

Pass*, Refer to the FCC ID: 2AQKR-P001R1



6.7 Frequency stability

Test Requirement:	FCC Part15 E Section 15.407 (g), RSS-Gen section 6.13
Limit:	Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
Test setup:	Temperature Chamber
	Spectrum analyzer EUT Att. Variable Power Supply
Test procedure:	 Note: Measurement setup for testing on Antenna connector The EUT is installed in an environment test chamber with external power source. Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage of EUT. A sufficient stabilization period at each temperature is used prior to each frequency measurement. When temperature is stabled, measure the frequency stability. The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage.Change setting of chamber and external power source to complete all conditions.
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass*, Refer to the FCC ID: 2AQKR-P001R1





8 EUT Constructional Details

Reference to the test report No. CCISE191108001

-----End of report-----