RF EXPOSURE EVALUATION REPORT

FCC ID	:	**2AKJ5-N2**
Equipment	:	**Nauto 2**
Brand Name	:	**Nauto 2**
Model Name	:	**Nauto 2**
Applicant	:	**Nauto Corporation** **220 Portage Avenue Palo Alto, CA 94306**
Manufacturer	:	**Qisda Corporation** **18 Jihu Road. Neihu, Taipei 114, Taiwan**
Standard	:	**47 CFR Part 2.1091**

We, SPORTON INTERNATIONAL INC has been evaluated in accordance with 47 CFR Part 2.1091 for the device and pass the limit.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Jones Tsai

Approved by: Jones Tsai / Manager

SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FA6D1501-07	Rev. 01	Initial issue of report	Aug. 10, 2018
FA6D1501-07	Rev. 02	Revised section 4.1 and 4.2	Aug. 13, 2018

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Nauto 2
Brand Name	Nauto 2
Model Name	Nauto 2
FCC ID	2AKJ5-N2
Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 17: 704 MHz ~ 716 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink) LTE: QPSK, 16QAM 802.11a/b/g/n HT20/HT40 Bluetooth BR/EDR/LE
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Reviewed by: Eric Huang

Report Producer: Wan Liu

2. Maximum RF average output power among production units

Mode		Maximum Average power(dBm)
WCDMA	Band II	25.0
	Band V	24.5
LTE	Band 2	24.0
	Band 4	24.0
	Band 5	24.0
	Band 17	24.0

Band / Mode	Average Power (dBm)	
	BR / EDR	LE
Bluetooth	4.0	0

Mode		Average power (dBm)
2.4GHz WLAN	802.11 b	16.5
	802.11 g	14.0
	802.11 n	14.0

3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

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

Where:
S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
WCDMA Band 2	1852.4	1.90	25.00	26.900	0.490	489.779	0.097	1.000	0.097
WCDMA Band 5	826.4	0.10	24.50	24.600	0.288	288.403	0.057	0.551	0.104
LTE Band 2	1850.7	1.90	24.00	25.900	0.389	389.045	0.077	1.000	0.077
LTE Band 4	1710.7	1.90	24.00	25.900	0.389	389.045	0.077	1.000	0.077
LTE Band 5	824.7	0.10	24.00	24.100	0.257	257.040	0.051	0.550	0.093
LTE Band 17	706.5	-4.80	24.00	19.200	0.083	83.176	0.017	0.471	0.035
2.4GHz WLAN	2412.0	3.60	16.50	20.100	0.102	102.329	0.020	1.000	0.020
Bluetooth	2402.0	3.60	4.00	7.600	0.006	5.754	0.001	1.000	0.001

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band

4.2. Collocated Power Density Calculation

WWAN Power Density / Limit	WLAN Power Density / Limit	Σ(Power Density / Limit) of WWAN+WLAN
0.104	0.020	0.124

WWAN Power Density / Limit	Bluetooth Power Density / Limit	Σ(Power Density / Limit) of WWAN+Bluetooth
0.104	0.001	0.105

Note:

1. Σ(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN and WWAN + Bluetooth.
2. Considering the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.