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KDB 447498 D03
47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091

RF EXPOSURE REPORT

For

Water sensor

Model: WS900



NEXTGENAGAIN

Trade Name:

Issued to

Nextgenagain

12274 oakview way, San Diego, California, United States, 92128

Issued By

Compliance Certification Services Inc.

No.11, Wugong 6th Rd., Wugu Dist.,

New Taipei City 24891, Taiwan. (R.O.C.)

Issued Date: November 20, 2020

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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.

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REVISION HISTORY

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	November 10, 2020	Initial Issue	ALL	Angel Cheng
01	November 19, 2020	See the following note rev.01	P.5	Angel Cheng
01	November 20, 2020	See the following note rev.02	P.5.7	Angel Cheng

Note:

- ※ Rev.00 Issue Date: November 10, 2020
Original Report.
- ※ Rev.01 Issue Date: November 19, 2020
Revised the typo.
- ※ Rev.02 Issue Date: November 20, 2020
Update the Tune-up Power.



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1. TEST RESULT CERTIFICATION

We hereby certify that:

The equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirement of the applicable standards. The test record, data evaluation and Equipment under Test (EUT) configurations represented herein are true and accurate accounts of the measurement of the sample's RF characteristics under the conditions specified in this report.

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted
Statements of Conformity	
Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.	

Approved by:

Kevin Tsai
Deputy Manager
Compliance Certification Services Inc.

2. LIMIT

According to §1.1310 (e) (B) Limits for General Population/Uncontrolled Exposure, the frequency range (MHz) for 300-1,500 of Power density(mW/cm²) should be **f/1500**.

3. EUT SPECIFICATION

EUT	Water sensor		
Model	WS900		
Trade Name	 NEXTGENAGAIN		
Model Discrepancy	N/A		
Frequency band (Operating)	☐ 802.11b/g/n HT20: 2412MHz ~ 2462MHz 802.11n HT40: 2422MHz ~ 2452MHz ☒ Others (900MHz)		
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others		
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=0.6mW/cm ²)		
Antenna Specification	Antenna Gain : -23.00 dBi (Numeric gain: 0.01)		
Maximum Average output power	900MHz	12.19 dBm	(16.558 mW)
Maximum Tune up Power	900MHz	12.50 dBm	(17.783 mW)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A		
Frequency band (Operating)	☐ 802.11b/g/n HT20: 2412MHz ~ 2462MHz 802.11n HT40: 2422MHz ~ 2452MHz ☒ Others (900MHz)		

Note: RF power data reference report (T200818N03-RP1)

4. TEST RESULTS

No non-compliance noted.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P / 1000) \times G}{377 \times (d / 100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²



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5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

900MHz :

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)	Result
1	900	17.783	0.01	20	0.00004	0.6	Pass