



Shenzhen Global Test Service Co.,Ltd.

1F, Building No. 13A, Zhonghaixin Science and Technology City, No.12,6 Road, Ganli Industrial Park, Buji Street, Longgang District, Shenzhen, Guangdong

RF Exposure evaluation

Report Reference No.....: GTSR16120089-02

FCC ID.....: 2AKO3-HTPW300

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Date of issue.....: Dec. 27, 2016

Representative Laboratory Name : Shenzhen Global Test Service Co.,Ltd.

Address: 1F, Building No. 13A, Zhonghaixin Science and Technology City, No.12,6 Road, Ganli Industrial Park, Buji Street, Longgang District, Shenzhen, Guangdong

Applicant's name.....: Dogness Smart Technology(Dongguan)Co.,LTD

Address: Third floor, building1, Tongsha new industrial zone, Tongsha community of Dongcheng street, Dongguan city

Test specification:

Standard: ANSI C95.1-1999/IEEE 1528:2013

47CFR §2.1093

TRF Originator: Shenzhen Global Test Service Co.,Ltd.

Master TRF.....: Dated 2014-12

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Test item description: DOGNESS smart pet's collar

Trade Mark: /

Manufacturer: Dogness Smart Technology(Dongguan)Co.,LTD

Model/Type reference.....: HT-PW300-S

Listed Models: See 2.3

Operation Frequency.....: GSM 850MHz; PCS 1900MHz;

Modulation Type: GPRS(GMSK)

Hardware version: CWOIS_V2

Software version: DS-T-1.0V

Rating: DC 3.80V

Result.....: **PASS**

TEST REPORT

Test Report No. :	GTSR16120089-02	Dec. 27, 2016
		Date of issue

Equipment under Test : DOGNESS smart pet's collar

Model /Type : HT-PW300-S

Listed Models : See 2.3

Applicant : **Dogness Smart Technology(Dongguan)Co.,LTD**

Address : Third floor, building1, Tongsha new industrial zone, Tongsha community of Dongcheng street, Dongguan city

Manufacturer : **Dogness Smart Technology(Dongguan)Co.,LTD**

Address : Third floor, building1, Tongsha new industrial zone, Tongsha community of Dongcheng street, Dongguan city

Test result	Pass
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. SUMMARY

1.1. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer
- - supplied by the lab

<input type="radio"/> /	M/N:	/
	Manufacturer:	/

1.2. Product Description

Product Name:	DOGNESS smart pet's collar
Trade Mark:	/
Model/Type reference:	HT-PW300-S
List Model:	C2,JD01,HT-PW300-ST,HT-PW300-SC,HT-PW300-SD,HT-PW300-SE,HT-PW300-SF,HT-PW300-SG,HT-PW300-SH,HT-PW300-SI,HT-PW300-SJ,HT-PW300-SK,HT-PW300-SL,HT-PW300-SN,HT-PW300-SO,HT-PW300-SP,HT-PW300-SQ,HT-PW300-SR,HT-PW300-SS
Power supply:	DC 3.80V
Modulation Type	GMSK
Antenna Type	Internal antenna
GPS function	Supported
GPRS	Supported
GPRS Note	The manufacturer controls the duty cycle of GPRS as 3% by the software
GPRS Power Class	GPRS 850:Power Class 4/ GPRS 1900:Power Class 1
GPRS Operation Frequency	GPRS 850 :824.2MHz-848.8MHz/ GPRS 1900:1850.2MHz-1909.8MHz
GPRS Operation Frequency Band	GPRS850/GPRS1900
GPRS Multislot Class	Multi-slot Class 12
Extreme temp. Tolerance	-30°C to +50°C
GPRS operation mode	Class B
Antenna gain:	GPRS 850: -0.92dbi, GPRS 1900: -1.13dbi
Remark: The products are identical in interior structure, electrical circuits and components, just model names and color are different.	

Note: For more details, refer to the user's manual of the EUT.

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Shenzhen Global Test Service Co.,Ltd.

1F, Building No. 13A, Zhonghaixin Science and Technology City, No.12,6 Road, Ganli Industrial Park, Buji Street, Longgang District, Shenzhen, Guangdong

2.2. Test Facility

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

FCC-Registration No.: 964637

Shenzhen Global Test Service Co.,Ltd EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 964637, Jul 24, 2015.

CNAS-Lab Code: L8169

Shenzhen Global Test Service Co.,Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories. Date of Registration: Dec. 11, 2015. Valid time is until Dec. 10, 2018.

2.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 °C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

3. Method of measurement

3.1. Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1093 RF exposure requirement

KDB447498 v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

3.2. Requirement

According to KDB447498 D01 General RF Exposure Guidance v06 Section 4.3.1 Standalone SAR test exclusion considerations: "Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition, listed below, is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.²² The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander (see 5) of section 4.1). To qualify for SAR test exclusion, the test separation distances applied must be fully explained and justified by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, typically in the SAR measurement or SAR analysis report, according to the required published RF exposure KDB procedures. When no other RF exposure testing or reporting is required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for the SAR test exclusion. When required, the device specific conditions described in the other published RF exposure KDB procedures must be satisfied before applying these SAR test exclusion provisions; for example, handheld PTT two-way radios, handsets, laptops & tablets etc.²³ "

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f} \text{ (GHz)}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where:}$

- f (GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

3.3. Conducted Power Results

Max Conducted power measurement results and power drift from tune-up tolerance provide by manufacturer:

GSM 850		Burst-Average Conducted power (dBm)			/	Time-Average power (dBm)			
		Channel/Frequency(MHz)				Channel/Frequency(MHz)			
		128/824.2	190/836.6	251/848.8		128/824.2	190/836.6	251/848.8	
GPRS (GMSK)	1TX slot	32.44	32.25	32.30	-9.03dB	23.41	23.22	23.27	
	2TX slot	30.54	30.67	30.41	-6.02dB	24.52	24.65	24.39	
	3TX slot	30.44	30.22	30.35	-4.26dB	26.18	25.96	26.09	
	4TX slot	29.73	29.56	29.41	-3.01dB	26.72	26.55	26.40	
GSM 1900		Burst Conducted power (dBm)			/	Average power (dBm)			
		Channel/Frequency(MHz)				Channel/Frequency(MHz)			
		512/ 1850.2	661/ 1880	810/ 1909.8		512/ 1850.2	661/ 1880	810/ 1909.8	
		1TX slot	30.55	30.69	30.87	-9.03dB	21.52	21.66	21.84
GPRS (GMSK)	2TX slot	28.67	28.72	28.99	-6.02dB	22.65	22.70	22.97	
	3TX slot	27.47	27.58	27.66	-4.26dB	23.21	23.32	23.40	
	4TX slot	27.04	27.31	27.48	-3.01dB	24.03	24.30	24.47	

NOTES:

1) Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

Manufacturing tolerance

GSM 850 GPRS (GMSK) (Brust-Average)				
Channel		251	190	128
1 Txslot	Target (dBm)	32.00	32.00	32.00
	Tolerance \pm (dB)	1	1	1
2 Txslot	Target (dBm)	30.00	30.00	30.00
	Tolerance \pm (dB)	1	1	1
3 Txslot	Target (dBm)	30.00	30.00	30.00
	Tolerance \pm (dB)	1	1	1
4 Txslot	Target (dBm)	29.00	29.00	29.00
	Tolerance \pm (dB)	1	1	1
GSM 1900 GPRS (GMSK) (Brust-Average)				
Channel		810	661	512
1 Txslot	Target (dBm)	30.0	30.0	30.0
	Tolerance \pm (dB)	1	1	1
2 Txslot	Target (dBm)	28.00	28.00	28.00
	Tolerance \pm (dB)	1	1	1
3 Txslot	Target (dBm)	27.0	27.0	27.0
	Tolerance \pm (dB)	1	1	1
4 Txslot	Target (dBm)	27.0	27.0	27.0
	Tolerance \pm (dB)	1	1	1

4. Evaluation Result

GPRS is not always transmitting, and the duty cycle of GPRS is 3%. So the average power of GPRS850 and GPRS 1900 are Calculated as follows

$$\text{GPRS900}_{\text{max}} = 30 - 3.01 - 10 \log(3\%) = 11.76 \text{ dBm}$$

$$\text{GPRS1900}_{\text{max}} = 28 - 3.01 - 10 \log(3\%) = 9.76 \text{ dBm}$$

Band/Mode	f (GHz)	Antenna Distance (mm)	RF output power (including tune-up tolerance)		SAR Test Exclusion Threshold	SAR Test Exclusion
			dBm	mW		
GRRS850	0.849	5	11.76	14.997	2.76 < 3.0	Yes
GPRS1900	1.910	5	9.76	9.462	2.61 < 3.0	Yes

5. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold KDB 447498 v06.

.....End of Report.....