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MPE TEST REPORT

Report Reference No. ..... :	**TRE1801017702**	R/C…….: 58088
FCC ID ..... :	**2ANWO-HOTSHOT**	
Applicant's name ..... :	**HOT SHOT SYSTEMS INC.**	
Address.....:	1005 E. 17TH, HAYS, Kansas, United States	
Manufacturer.....:	HOT SHOT SYSTEMS INC.	
Address.....:	1005 E. 17TH, HAYS, Kansas, United States	
Test item description ..... :	**TR-1000**	
Trade Mark .....:	Hot Shot TR-1000	
Model/Type reference.....:	TR-1000	
Listed Model(s) .....:	-	
Standard ..... :	**FCC Per 47 CFR 2.1091(b)；KDB447498 v05r02**	
Date of receipt of test sample……..:	Jan. 25, 2018	
Date of testing……:	Jan. 25, 2018 –Feb. 06, 2018	
Date of issue……...:	Feb. 06, 2018	
Result.....……...:	**PASS**	

Compiled by (position+printed name+signature)..:	File administrators Shayne Zhu	Shayne Zhu
Supervised by (position+printed name+signature)..:	Project Engineer Cary Luo	Cary Luo
Approved by (position+printed name+signature)..:	RF Manager Hans Hu	Hans Hu

Testing Laboratory Name ..... :	**Shenzhen Huatongwei International Inspection Co., Ltd**
Address.....:	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

Contents

1. SUMMARY

1.1. Client Information

Applicant:	HOT SHOT SYSTEMS INC
Address:	1005 E. 17TH, HAYS, Kansas, United States
Manufacturer:	HOT SHOT SYSTEMS INC
Address:	1005 E. 17TH, HAYS, Kansas, United States

1.2. Report version information

Revision No.	Date of issue	Description
N/A	2018-02-06	Original

1.3. Product Description

Name of EUT:	TR-1000
Trade mark:	Hot Shot TR-1000
Model/Type reference:	TR-1000
Listed model(s):	-
Power supply:	-
Battery information:	-
Charger information:	-
Adapter information:	-
Operation Frequency Range:	151.82 MHz, 151.88 MHz, 151.94 MHz, 154.57 MHz,154.60MHz
Rated Output Power:	2W (33dBm)
Modulation Type:	FM
Channel Separation:	☒ 12.5kHz ☒ 25kHz
Emission Designator:	☒12.5kHz Channel Separation: 10K1F3E ☒25kHz Channel Separation: 10K4F3E
Antenna Type:	External
Maximum Transmitter Power:	1.45W for 12.5kHz Channel Separation 1.89W for 25kHz Channel Separation

1.4. Test frequency list

Mode	Modulation	Channel Separation(kHz)	Test Frequency (MHz)	
Analog	FM	12.5	CH_L	151.82
			CH_{M1}	151.88
			CH_{M2}	151.94
		25	CH_{M2}	154.57
			CH_H	154.60

1.5. EUT operation mode

Test mode	Transmitting	Analog	
		12.5kHz	25kHz
TX1	√	√	
TX2	√		√

√: is operation mode.

1.6. EUT configuration

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

● - supplied by the manufacturer

○ - supplied by the lab

○	Power Cable	Length (m) :	/
		Shield :	Unshielded
		Detachable :	Undetachable
○	Multimeter	Manufacturer :	/
		Model No. :	/

1.7. Modifications

No modifications were implemented to meet testing criteria.

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China
Phone: 86-755-26748019 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements
of ANSI C63.7, ANSI C63.4 (2009) and CISPR Publication 22.

2.2. Environmental conditions

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

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

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.57 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

3. Method of measurement

3.1. Applicable Standard

According to FCC Part 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 FCC Part 1.1310 and FCC Part 2.1091 RF exposure is calculated.
IEEE Std C95.1: 2005: "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz".
FCC OET Bulletin 65, Edition 97-01: "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields".
FCC Supplement C to OET Bulletin 65, Edition 01-01: "Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emission".
IEEE Std C95.3: 2002: "IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields with Respect to Human Exposure to Such Fields, 100 kHz – 300 GHz",

3.2. Limit

FCC Part 1.1310(e):

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 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
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	$*180/f^2$	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

3.3. MPE Calculation Method

Predication of MPE limit at a given distance
Equation from page 18 of OET Bulletin 65, Edition 97-01

$S=PG/4\pi R^2$

Where: S=power density
P=power input to antenna
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

TX1									
Test Frequency (MHz)	Minimum Separation Distance (cm)	Rated Output Power (dBm)	Tolerance (dB)	Max Output Power (dBm)	Max Output Power (mW)	Antenna Gain (Numeric)	Power Density At 50cm (mW/cm^2)	Limit (mW/cm^2)	Test Results
151.82	50	33.0	1.00	34.0	2512	1.9953	0.1596	0.2000	PASS
151.88	50	33.0	1.00	34.0	2512	1.9953	0.1596	0.2000	
151.94	50	33.0	1.00	34.0	2512	1.9953	0.1596	0.2000	

TX2									
Test Frequency (MHz)	Minimum Separation Distance (cm)	Rated Output Power (dBm)	Tolerance (dB)	Max Output Power (dBm)	Max Output Power (mW)	Antenna Gain (Numeric)	Power Density At 50cm (mW/cm^2)	Limit (mW/cm^2)	Test Results
154.57	50	33.0	1.00	34.0	2512	1.9953	0.1596	0.2000	PASS
154.6	50	33.0	1.00	34.0	2512	1.9953	0.1596	0.2000	

Note:
Max Output Power(dBm)= Rated Output Power(dBm)+Tolerance(dB)
Antenna Gain (Numeric)=10^[Antenna Gain (dBi)/10]
EUT Antenna Gain=3.0dBi

4. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 1.1310(e) for general population/ Uncontrolled exposure.

----------End of Report----------