RF Exposure Evaluation Report

For

Product Name:	**Clever Dog Smart Camera**
Brand Name:	**Clever Dog**
Model No.:	**DOG-3G72**
Series Model :	**B-001, G-002, P-003, O-004**
FCC ID:	**2ADHE-DOG-3G72**
Standards:	**FCC 47 CFR 2.1091**
Test Report Number:	**C150914R02-RP1**

Issued for

Shenzhen Cylan Technology Co.,Ltd

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Issued by

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TESTING CERT #2541.01

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	October 27, 2015	C150914R02-RP1	ALL	N/A

1 TEST RESULT CERTIFICATION

Product Name:	Clever Dog Smart Camera
Brand Name:	Clever Dog
Model Name:	DOG-3G72
Series Model :	B-001, G-002, P-003, O-004
Device Category:	Mobile unit
Applicant: Address:	**Shenzhen Cylan Technology Co.,Ltd** Room 605-609,Minning Business Building,Cai Tian North Road, Futian District, Shenzhen
Manufacturer: Address:	**Shenzhen Cylan Technology Co.,Ltd** Room 605-609,Minning Business Building,Cai Tian North Road, Futian District, Shenzhen
Date of Test:	October 6, 2015~October 26, 2015
Test Result :	Conform

APPLICABLE STANDARDS	
Standard	**Test Result**
FCC 47 CFR 2.1091	**No non-compliance noted**

U-NII devices are subject to the radio frequency radiation exposure requirements specified in §§2.1091 of this chapter, as appropriate. All equipment shall be considered to operate in a "general population/uncontrolled" environment. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

Tested by: James.yan

Approved by: Manager: *Jeff.Fang*

2 EUT DESCRIPTION

Product Name:	Clever Dog Smart Camera
Brand Name:	Clever Dog
Model Name:	DOG-3G72
Series Model :	B-001, G-002, P-003, O-004
Model Discrepancy:	Only for market segment
Power Supply:	DC5.0V
Frequency Range :	GPRS 850: 824.20 ~ 848.80 MHz GPRS 1900: 1850.20 ~ 1909.80 MHz. E-GPRS 850: 824.20 ~ 848.80 MHz E-GPRS 1900: 1850.20 ~ 1909.80 MHz WCDMA Band V:826.4~846.6 MHz
Transmit Power :	GPRS 850: 32.43 dBm E-GPRS 850: 32.36 dBm GPRS 1900: 30.05 dBm E-GPRS 1900: 29.93 dBm WCDMA Band V: 25.90 dBm
Antenna Specification:	GSM/GPRS/WCDMA：PIFA Antenna -2.0 dBi

Note: for more details, please refer to the User's manual of the EUT.

3 RF Exposure Evaluation

3.1. RF Exposure Compliance Requirement

3.1.1. Limits

According 47 CFR 1.1310 FCC MPE limits for General population/Uncontrolled Exposure are showing in the Table1:

Table1

Frequency Range	Electric Field Strength [E] (V/m)	Magnetic Field Strength [H](A/m)	Power density [S](mW/cm^2)	Averaging time （min）
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 – 1500	-------	-------	f/1500	30
1500 – 100,000	-------	-------	1	30

f = frequency in MHz

* = Plane-wave equivalent Power Density

The EUT will be only used with a separation of 20 cm or greater between the antennas and the user or nearby person and therefore can be consider a mobile transmitter per 47 CFR 2.1091(b). Due to deployment conditions, device has to comply with Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled Exposure.

3.1.2. Test Procedure

Based on FCC Bulletin OET 65, the MPE calculations in case of multiple transmitters have been e performed on the following and assumptions and equations:

1. For transmitters which operate in the frequency band with a same MPE limit the Power Densities are summed. The Total Power Density shall not exceed the Limit for this band.
2. For transmitters which operate in frequency bands with a different MPE the Power Densities are calculated separately for each band, and then divided by Limit for each band. The sum of these ratios shall not exceed 1.

3. Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

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:

$$S = \frac{30 \times P \times G}{3770 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and
d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ ***Equation 1***

Where *d = Distance in cm*
P = Power in mW
G = Numeric antenna gain
S = Power density in mW / cm²

4. According Table3, limit for EV-DO transmitter in 824.2 – 848.8 MHz band shall be calculated at the lowest frequency (worst case) as:

824.2 / 1500 = 0.55 mW/cm²

3.2. EUT RF Exposure Evaluation

Modulation Mode	Frequency band (MHz)	Max. Conducted output power(dBm)	Max. tune up power (dBm)	Antenna gain (dBi)	Distance (cm)	Duty sycle	Power density (mW/cm^2)	Limit (mW/cm^2)
GPRS850	824.2-848.8	32.43	33	-2.0	20	0.25	0.062632	0.55
E-GPRS850		32.36	33	-2.0	20	0.25	0.062632	0.55
GPRS1900	1850.2-1909.8	30.05	31	-2.0	20	0.25	0.039518	1
E-GPRS1900		29.93	31	-2.0	20	0.25	0.039518	1
WCDMA Band V	826.4~846.6	25.90	26	-2.0	20	1	0.049987	1