



시험 성적서

TEST REPORT

페이지(page) : (1) / (총(Total) 7)

성적서 번호 Report No.		ICRT-TR-E220815-0A	
신청자 Client	기관명 Name	PITTASOFT CO.,LTD.	
	주 소 Address	A4th floor, ABN Tower, 331, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea	
시험대상품목 Sample description		Car Dashcam	
모델명 Type designation		BlackVue 7 LTE	
정 격 Ratings		DC 12.0 V / DC 24.0 V	
시험장소 Place of test		☒ 고정시험(Inside test) ☐ 현장시험(Field test) 주소지(Address): 112, 113 Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea	
시험기간 Date of test		01.Mar. 2022 ~ 29. Mar. 2022	
시험방법/항목 Test Method/Item		FCC rule §2.1091	
시험결과 Test Results		Refer to 3. Maximum Permissible Exposure	
확 인 Affirmation	작성자 Tested by	기술책임자 Technical Manager	
	성 명 Name Yeong-Hwan, Hong (서명) (Signature)	성 명 Name Min-Gi, Son (서명) (Signature)	
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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
ICRT-TR-E220815-0A	06-Apr-2022	Initial Issue	All



1. Applicant & Manufacturer & Test Laboratory Information

1.1 Applicant information

Applicant	PITTASOFT CO.,LTD.
Address	A4th floor, ABN Tower, 331, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
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1.2 Manufacturer Information

Manufacturer 1	PITTASOFT CO.,LTD.
Address	A4th floor, ABN Tower, 331, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

1.3 Test Laboratory Information

Conducted tests were performed at	
Laboratory	ICR Co., Ltd.
Address	112, Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea
Telephone No.	+82-2-6351-9002
Fax No.	+82-2-6351-9007
RRA No.	KR0165
KOLAS No.	KT652
Test Firm Registration Number	490614



2. Equipment under Test(EUT) Information

2.1 General Information

Product Name	Car Dashcam
Brand Name	-
Model Name	BlackVue 7 LTE
Additional Model Name	BlackVue 7-1CH LTE, BlackVue 7-2CH LTE, BlackVue 7-2CH IR LTE, BlackVue 7-2CH DMS LTE , BlackVue 7-2CH Truck LTE, BlackVue 7-2CH ELD LTE
FCC ID	YCK-BV7LTE
Power Supply	DC 12.0 V / DC 24.0 V

2.2 Additional Information

Equipment Class	DTS-Digital Transmission System	
Device Type	Stand-alone	
Operating Frequency	802.11b/g/n(HT20)	2 412 MHz ~ 2 462 MHz
	802.11n(HT40)	2 422 MHz ~ 2 452 MHz
	Bluetooth LE	2 402 MHz ~ 2 480
RF Output Power	802.11b	12.68 dBm
	802.11g	9.94 dBm
	802.11n(HT20)	9.86 dBm
	802.11n(HT40)	9.78 dBm
	Bluetooth BDR	0.5 dBm
	Bluetooth EDR	1.2 dBm
	Bluetooth LE	-2.81 dBm
Number of Channel	802.11b/g/n(HT20)	11
	802.11n(HT40)	7
	Bluetooth LE	40
Modulation Type	802.11b: DSSS Modulation 802.11g/n(HT20/HT40): OFDM Modulation	
Antenna Type	Chip Antenna	
Antenna Gain	1.88 dBi	
Antenna Operating Mode	Single Antenna Equipment with only one antenna	

2.3 Mode of operation during the test

- The EUT is continuous transmission mode during the test with set to each of the Low Channel, Middle Channel, and High Channel at the worst case data rate. The worst case data rate for each modulation is determined 1 Mbps for IEEE 802.11b, 6 Mbps for IEEE 802.11g, 6.5 Mbps for HT20.



2.4 Modifications of EUT

- None

2.5 Reason of Additional Model Name

- The basic model, electrical specifications, structure, and circuit are the same, but simple wave life is added due to the seller.



3. Maximum Permissible Exposure

3.1 RF Exposure calculation

According to the FCC rule 1.1310 table 1B, the limit for the maximum permissible RF exposure for an uncontrolled environment are $f/1500 \text{ mW/cm}^2$ for the frequency range between 300 MHz and 1 500 MHz and 1.0 mW/cm^2 for the frequency range between 1 500 MHz and 100 000 MHz.

The electric field generated for a 1 mW/cm^2 exposure is calculated as follows:

$$E = \sqrt{(30 * P * G)} / d, \text{ and } S = E^2 / Z = E^2 / 377, \text{ because } 1 \text{ mW/cm}^2 = 10 \text{ W/m}^2$$

Where

S = Power density in mW/cm^2 , Z = Impedance of free space, 377Ω

E = Electric field strength in V/m, G = Numeric antenna gain, and d = distance in meter

Combining equations and rearranging the terms to express the distance as a function of the remaining variable

$$d = \sqrt{(30 * P * G) / (377 * 10 S)}$$

Changing to units of mW and cm , using $P (\text{mW}) = P (\text{W}) / 1 000$, $d (\text{cm}) = 0.01 * d (\text{m})$

$$d = 0.282 * \sqrt{(P * G) / S}$$

Where

d = distance in cm , P = Power in mW , G = Numeric antenna gain, and S = Power density in mW/cm^2



3.2 Result

According to above equation, the following result was obtained.

Operating Mode	Target Power W / tolerance	Max tune up power		Antenna Gain		Power Density (mW/cm ²) @ 20 cm Separation	Limit (mW/cm ²)
		(dBm)	(mW)	Log	Linear		
802.11b	12.68 ± 1.0	13.68	23.33	1.88	1.54	0.0072	1.00
802.11g	9.94 ± 1.0	10.94	12.42			0.0038	
802.11n(HT20)	9.86 ± 1.0	10.86	12.19			0.0037	
802.11n(HT40)	9.78 ± 1.0	10.78	11.97			0.0037	
Bluetooth BDR	0.5 ± 1.0	1.5	1.41			0.0004	
Bluetooth EDR	1.2 ± 1.0	2.2	1.66			0.0005	
Bluetooth LE	-2.81 ± 1.0	-1.81	0.66			0.0002	
LTE Band 2	22. ± 1.0	23.0	199.53	12.40	17.38	0.6902	0.462 (0.466 x 0.992 3)
LTE Band 4	22. ± 1.0	23.0	199.53	12.40	17.38	0.6902	
LTE Band 12	22. ± 1.0	23.0	199.53	9.08	8.09	0.3213	

For getting power density at 20 cm separation in above table, following formula was used.

$$S = P * G / (4\pi * R^2) = 199.53 * 17.38 / (4 * \pi * 20^2) = 0.6902$$

Where:

S = Power Density,

P = Power input to the external antenna (Output power from the EUT antenna port (dBm) – cable loss (dB)),

G = Gain of Transmit Antenna (linear gain), R = Distance from Transmitting Antenna

- Conclusion of Simultaneous Transmitter

Operating Mode	Target Power W / tolerance	Max tune up power		Antenna Gain		Power Density (mW/cm ²) @ 20 cm Separation	SUM [Power Density (mW/cm ²) @ 20 cm Separation]	Limit (mW/cm ²)
		(dBm)	(mW)	Log	Linear			
802.11b	12.68 ± 1.0	13.68	23.33	1.88	1.54	0.0072	0.703	1.00
Bluetooth EDR	1.2 ± 1.0	2.2	1.66			0.0005		
LTE Band 2	22. ± 1.0	23.0	199.53	12.40	17.38	0.6902		

- END OF REPORT.